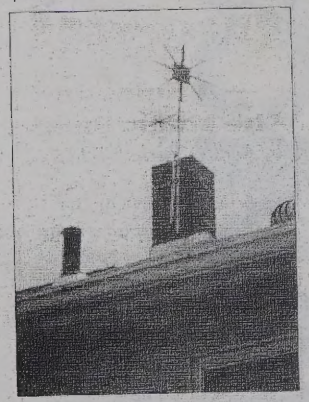
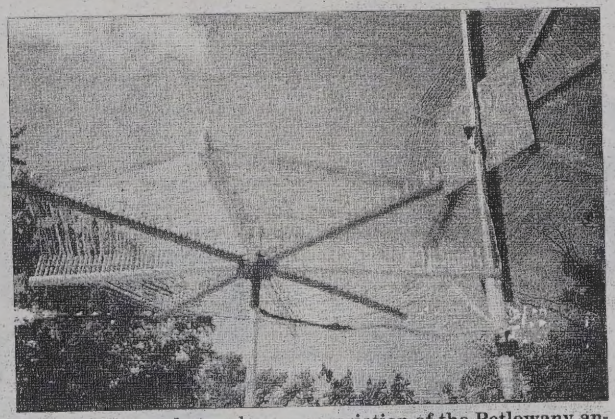
Variations on a "Petlowany"

William Caldwell Sr., WA8ABE

Last March, a friend showed me an article from ***Worldradio***, about a new type of antenna. He asked if this were possible, and could it work. Since it was such a radical difference from antennas as we know them, and since I have been around Amateur Radio since the early thirties, I agreed to experiment with it and to give a report to the local club.





Left and above photos show my variation of the Petlowany antennas mounted vertically and horizontally for testing on various bands.

This was my experience with the "Petlowany" antenna. First I found the reason the antenna went into antiquity was the difficulty in winding it. After winding several by hand, I decided to make a form to hold the windings. It doesn't matter whether the antenna is round, square, or octagonal other than some difference in wire length. As long as the windings are symmetrical and spaced evenly, the performance was the same. Size of wire had no effect on the perfomance other than power limitations with smaller sizes.

I have made more than a dozen of these antennas, all the way from 2 Meters to 160 Meters, and every one of them had the same characteristics. If the wire is measured for one quarter-wave plus a little, spaced evenly and symmetrically, the impedance will be near 52 Ohms.

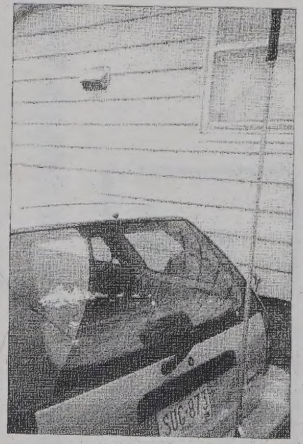
I started by making square forms using 1/2" X 3/4" X 20" wood and forming a cross. I then drilled a 1/8" hole in the center, and drilled a 1/8" hole every 1/4". After drilling all the holes, I cut 1/8" dowel into pieces 1 1/4" long. I placed them in the holes and drove them into place with a hammer. If they were loose, I glued them in. I made a second form with the cross being 24" in total diameter to accommodate the longer wire for 160 Meters.

Starting at the center hole and proceeding to the end of the wire, stretching the wire as I went, made for a very sturdy antenna. The connections are simple. I soldered the center conductor to the center end of the wire and I either left the shield alone or hooked it up to ground. The ground can come by way of the transmitter end.

The first antenna was wound with #26 telephone wire and was used on receive only, or with very low power. I used the smaller wire because it was easier to use and keep tight. I tested this antenna with an MFJ-259 antenna analyzer and with six feet of RG58U coax to test in the shack. I compared receiver "S" units with an inverted "Vee" with the apex at 35 feet. On 160 Meters, the inverted "Vee" brought a skimpy S-1, but the spiral antenna, at 20 feet high read a peak S3-4 on SSB.

For the second antenna, I used #14 house wiring with the insulation removed. At lower frequencies this antenna would not tune when in a vertical position, so I had to mount it horizontally. At higher frequencies, the orientation didn't seem to matter, however the impedance did go up while in the horizontal position. After using the #14 wire, and having difficulty maintaining parallel windings, I tried three #26 wires, twisted slightly and in parallel and found it much easier to work with. Three #26 wires in parallel allows the use of 100 watts.

After using these antennas, my mind wandered to mobile use. Since the mobile antennas have only 12 or so Ohms, maybe this "Petlowany" could be used for a counterpoise. I made a square "Petlowany" wound for 4 MHz and attached it to the ground of the mobile antenna base, laid it on the shelf of the rear window, and went mobiling to a hamfest 60 miles away. (The mobile antenna is an old Hustler center loaded which was for 40 Meters originally, but I rewound the coil for 15 Meters.) I turned the radio on, and the reading was flat at 21.360. The band was pretty busy for early morning. Stations were on from Yugoslovia, Germany and many other European countries.



Good results were obtained by laying the antenna on the package shelf of the car.

My first contact was with W4ML, a special event station in Virginia and I received a 5-9 report. Next was YU4EBL, another special event station and another 5-9 report with "potent signal" added to it. A contest station in Germany, DK5EZ, was next, and another 5-9 report with "great mobile signal" added.

I've worked mobile for many years, but never got an answer almost every time I put my call in, especially in the middle of a pile-up. Because the "Petlowany" counterpoise brought the mobile antenna impedance to 50 Ohms, all the power was in the antenna. I removed the counterpoise and the answers stopped.

So, good enough for me, the "Petlowany" was a superior type of antenna. When some enterprising person gets it all together, this will be the next century's antenna, considering the widest antenna, for 160 Meters was only 24" wide.

I can't explain the characteristics of the antenna, nor the formulas for using it, but we've had many discussions in the club newsletter about it. I have given demonstrations of it at the meetings, and several of the guys are making their own, with good results.

Thanks to Bill Petlowany's father-in-law for being 100 years ahead of his time, to Bill for writing the article, and to ***Worldradio*** for printing the article. Not many magazines print articles without complicated math to confuse the masses. It was just a good down-to-earth article and with just enough information to make it interesting.

I'm still winding and experimenting, and will keep readers informed of any new developments.

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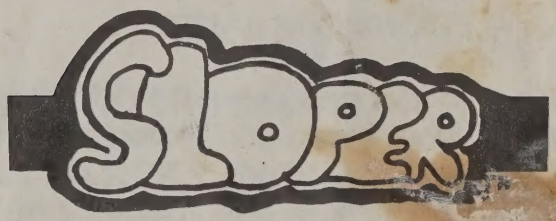

160 - 80 - 40

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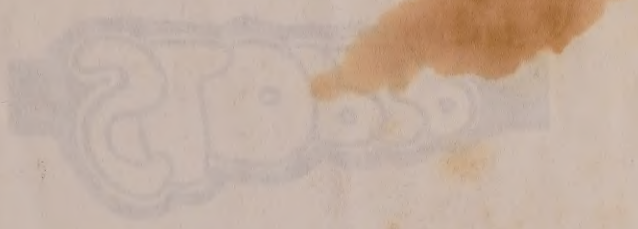

THANK YOU for your purchase of this SULTRONICS Multi-band SLOPER ANTENNA. We know that you are going to be well pleased with the antenna and its performance just like the other thousands of enthusiastic SULTRONICS SLOPER users throughout the world! Only the best materials and craftsmanship have gone into the construction of our SLOPER antenna.

Like every antenna, this multi-band SLOPER must be installed and tuned correctly to achieve its inherent peak performance. To help insure that you do obtain good performance, we suggest that you read through this manual entirely and study the figures and diagrams associated with the installation. For those individuals seeking further basic information regarding "sloper type" antennas in general, we refer you to the October 1981 issue of QST MAGAZINE (page 31) article entitled "More Thoughts on the Confounded Half-Sloper" by Doug Demaw, W1FB. Please understand that the SULTRONICS MULTI-BAND SLOPER is a much more refined antenna than those discussed in the QST article.

— INSTALLATION NOTES —

* The SULTRONICS MULTI-BAND SLOPER is supplied with all the wire elements EXTRA LONG! The wire elements must be trimmed before one can expect to find resonance within the various amateur bands covered by the SLOPER. The actual trimming process is really very simple and will be covered in great depth later in this manual.

* The support structure for the SULTRONICS MULTI-BAND SLOPER must offer a low resistance ground pathway. This requirement is easily filled by the normal grounded tower found in amateur radio use. If the tower does not offer a good ground return, we suggest attaching a large diameter (No. 14 or larger) wire to the sloper aluminum mounting bracket and running this wire to a good RF ground connection at the base of the support structure.

* INSULATED SUPPORTS: The SLOPER may be employed in cases where the support structure is of insulated nature (chimney, wooden pole, tree, etc.). In these instances, we suggest drilling the sloper aluminum mounting bracket for a bolt and lug with wire (No. 14 or larger) attached. This wire should then be routed from the mounting attachment point to ground where it will be connected to a good "RF earth ground" in the form of a driven ground rod or other earth grounding system.

* An antenna tuner (transmatch) is not needed with our SLOPER antennas. During the trimming process, you will be able to resonate the antenna at the frequency within each band that you desire. However, the use of even a modest antenna tuner will allow broader frequency bandwidth of operation. If an antenna tuner is to be employed, we would still suggest that you go through the trimming procedure for the antenna so as to achieve initial resonance within the covered bands.

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— INSTALLATION & TUNING INSTRUCTIONS —

(check off (x) each step as completed)

( ) 1. Unroll the sloper wire elements, removing any kinks that may have been induced during the packing and shipping operations.

( ) 2. Refer to FIGURE-1: For tower leg mounting, the aluminum mounting bracket will have to be drilled to accept a U-Bolt (user supplied) to fit your particular tower leg or installation method. It should be noted that if your tower is of the "sectional" type (such as Rohn) then the bracket may be fitted to one of the sectional bolts by simply removing the nut and placing the bracket hole over the bolt and reinstalling the nut! In this case, no other hole need be drilled as one hole already exists on the mounting end of the sloper bracket.

( ) 3. The SULTRONICS SLOPER antenna should be installed at a point no higher than 40 feet above ground. Tower Installation heights ranging from 20 to 40 feet all seem to work very well. However, the antenna seems to exhibit best overall performance at a mounting height of around 30 feet.!

( ) 4. Refer to FIGURE-4: Using the dimension examples given in Figure-4 and the location of the proper tuning points shown in Figure-6, cut the wire elements of your sloper antenna based on the resonant frequency desired. Refer to Figure-3 regarding the method of measuring the element spans. Please note: it is wiser to leave each element slightly longer than specified to allow individual tuning after your antenna has been installed.

( ) 5. Refer to FIGURE - 2: for the manner by which the SSL inductors are re-attached to the element wires. Note that only one end of each SSL coil is a "tuning point" and as such this is the only connection that has to be remade for that particular band! Please note that initially the 160m. wire element can be shortened simply by folding the wire back onto itself at the end insulator.

( ) 6. Use a VOM to check for continuity from the coax connector center pin (at the mouning bracket to the tip end of the sloper antenna.

( ) 7. Attach the sloper mounting bracket to the tower leg (or other support structure). Employ a VOM to check for a low resistance path between the aluminum bracket and the tower leg (or other ground return system).

( ) 8. Arrange the sloper so that it will not be in close proximity to any guy wires or other wire antennas, as best as possible.

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( ) 9. Attach your coaxial feedline to the Amphenol SO-239 connector on the sloper mounting bracket. We highly recommend the use of good quality coaxial cable such as RG-213 however any good 50 Ohm cable will suffice! It would be wise to apply some "COAX - SEAL" or other equal weather-proofing agent to the feedline coaxial connection.

( ) 10. Refer to FIGURE -4: Tying of the lower (tip) end of the sloper should be done so as to allow a gentle slope angle between the antenna and the support structure. We suggest that the end of the sloper be mounted such that it is 8 to 9 feet above ground. Since there is RF voltage at the tip end of the antenna, this is done as a routine safety measure! Please note that a heavy duty polycarbonate insulator and special low-stretch nylon rope has been provided for use at the sloper end.

( ) 11. Refer to FIGURE - 6: TUNING
Tune the HIGHER friquency element first (40 meters). Then tune the 80 meter element, followed by the element for the 160! It is best to make at least two passes through, tuning the antenna. Since low "Q" inductors are used (instead of traps) there will be some interaction in tuning as each band is trimmed/adjusted. Look for resonance at the lower end of each band, initially. Then gradually trim each band element to increase this resonant point to that desired for your operation. Once again, the initial pass through desired for your operation. Once again, the initial pass through the antenna in tuning should be done so as to achieve resonance at the lower portion on each band. The use of the low "Q" inductors allows high RF power operation and much greater operating bandwidth than that possible with common traps. During this tuning process, remake connections to the SSL coils in the same manner as done previously - refer to FIGURE-2.

( ) 12. Resonance should be easily achieved on the 160 meter band. When properly tuned, there should be an obvious dip in VSWR at the resonant frequency on each band. If resonance in difficult to obtain on the 80 meter band, you may be trying to attach the mounting bracket too high on your support structure. The use of a good transmatch will allow full band coverage and let solid state transmitters to load fully.

( ) 13. The SSL coils have been coated at the factory with two coats of a special polyurethane with UV light protectant. They should not be coated with any other material. After having your antenna properly resonant, you might wish to wrap a small piece of "COAX-SEAL" around the bare copper wire ends at the bolt connection on each of the SSL coils. All hardware used is of 18-8 Stainless Steel, and requires no further protection.

( ) 14. Tape the sloper coaxial feedline to the tower leg at intervals along its length.

( ) 15. This completes the installation and tuning of your new SULTRONICS MULTI-BAND SLOPER ANTENNA!

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ILLUSTRATION PAGE - TRIBAND

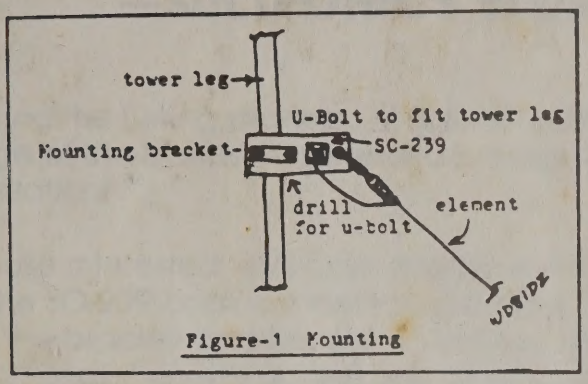


Figure-1 Mounting

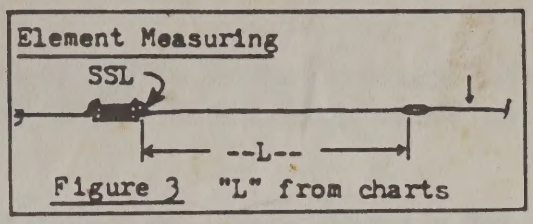
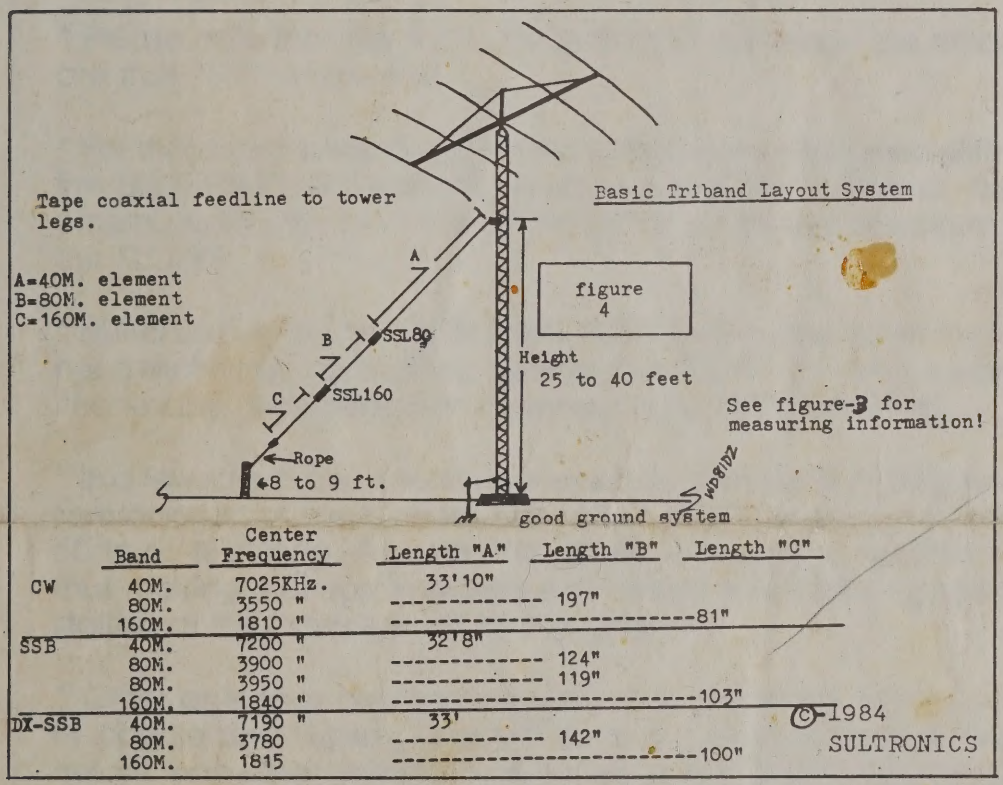


Figure 3 "L" from charts



	Band	Center Frequency	Length "A"	Length "B"	Length "C"
CW	40M.	7025KHz.	33'10"		
	80M.	3550 "	----------	197"	
	160M.	1810 "	----------	----------	81"
SSB	40M.	7200 "	32'8"		
	80M.	3900 "	----------	124"	
	80M.	3950 "	----------	119"	
	160M.	1840 "	----------	----------	103"
DX-SSB	40M.	7190 "	33'		
	80M.	3780	----------	142"	
	160M.	1815	----------	----------	100"

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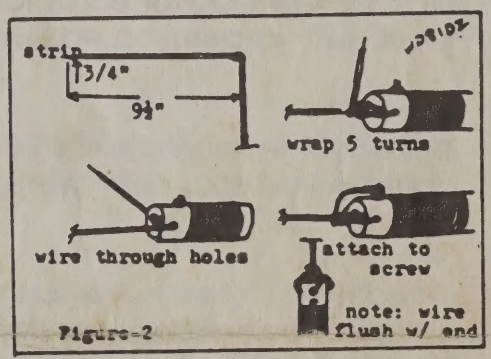

Figure-2

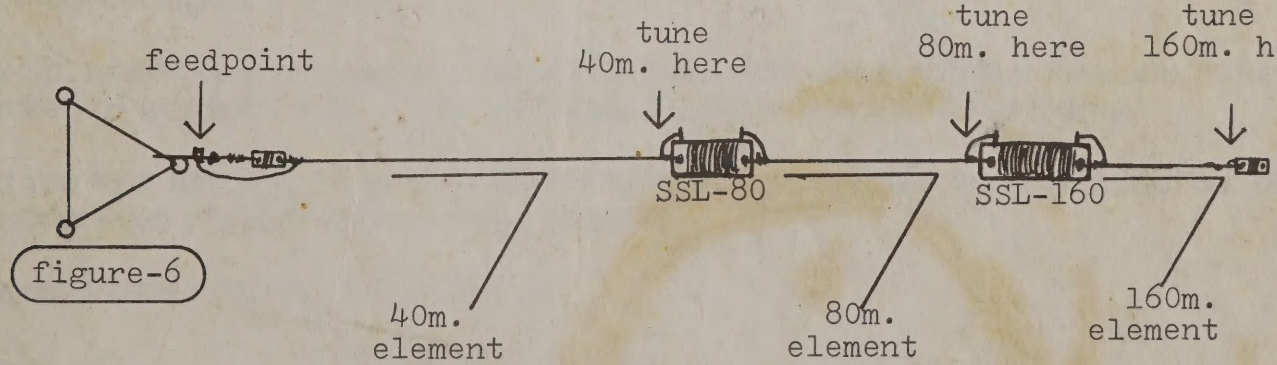

figure-6

TUNING SUGGESTION:
Clip each element approx. 3" at a time while tuning

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—SULTRONICS SLOPER HINKS & KINKS—

* If, during the tuning process, at first no resonance is found, be certain to check just below the edge of the bands. A general coverage receiver and RF noise bridge is very handy for this operation!

* For those interested: 450 Ohm ladder-line. One conductor may be soldered to the center pin of the SO-239 coax connector. The other ladder line conductor is attached by drilling a hole in the bracket and using a solder lug and bolt. In effect, this makes the sloper into an end fed "Zepp" antenna, and will allow coverage of all of the HF amateur bands!

* Please note that the SULTRONICS SLOPER antennas are efficient low angle radiators. These are true "DX" antennas!!

* For those using one of the newer transceivers equipped with a general coverage receiver, the SULTRONICS SLOPER will make a super SWL antenna, also! Since low Q inductors are employed (rather than traps), the entire shortwave spectrum will be covered by the use of our SLOPER.

* MARS user note: The SULTRONICS SLOPER will easily cover the MARS frequencies. If you should need technical assistance in getting your SLOPER on MARS please feel free to call our Technical Phone Line during regular business hours, (513) 376-2700.

* In a few rare cases, users have reported difficulty in finding resonance on the 80 meter band. Investigation of these cases has shown that in each case the coaxial feedline was approx. 60 to 65 feet long. As such, this length is approx. a quarter wavelength on 80 meters, and thus making it almost impossible to realize true VSWR figures when using a VSWR bridge installed at the "shack end" of the feedline!

* Other antennas and wires in very close proximity to the SLOPER may have a tendency to RF couple and "upset" one or the other (or all). Mounting the SLOPER bracket at a different height than other antennas and routing the SLOPER element away from other wires will correct this situation should it occur!

* "Crank-Up" type towers may need to have the ground return wire installed to the sloper mounting bracket, as was explained in the "Insulated Supports" section of this manuel.

* Should you ever need replacement parts or extra wire, please feel free to contact our office. We offer such parts at very nominal charges.

Once again THANK YOU and good DX'ing!!

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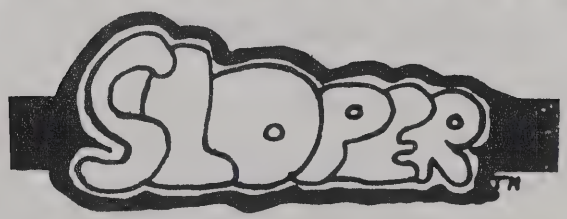

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— INSTALLATION NOTES —

* The SULTRONICS MULTI-BAND SLOPER is supplied with all the wire elements EXTRA LONG! The wire elements must be trimmed before one can expect to find resonance within the various amateur bands covered by the SLOPER. The actual trimming process is really very simple and will be covered in great depth later in this manual.

* The support structure for the SULTRONICS MULTI-BAND SLOPER must offer a low resistance ground pathway. This requirement is easily filled by the normal grounded tower found in amateur radio use. If the tower does not offer a good ground return, we suggest attaching a large diameter (No. 14 or larger) wire to the sloper aluminum mounting bracket and running this wire to a good RF ground connection at the base of the support structure.

* INSULATED SUPPORTS: The SLOPER may be employed in cases where the support structure is of insulated nature (chimney, wooden pole, tree, etc.). In these instances, we suggest drilling the sloper aluminum mounting bracket for a bolt and lug with wire (No. 14 or larger) attached. This wire should then be routed from the mounting attachment point to ground where it will be connected to a good "RF earth ground" in the form of a driven ground rod or other earth grounding system.

* An antenna tuner (transmatch) is not needed with our SLOPER antennas. During the trimming process, you will be able to resonate the antenna at the frequency within each band that you desire. However, the use of even a modest antenna tuner will allow broader frequency bandwidth of operation. If an antenna tuner is to be employed, we would still suggest that you go through the trimming procedure for the antenna so as to achieve initial resonance within the covered bands.

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TRIBAND

— INSTALLATION & TUNING INSTRUCTIONS —

(check off (x) each step as completed)

( ) 1. Unroll the sloper wire elements, removing any kinks that may have been induced during the packing and shipping operations.

( ) 2. Refer to FIGURE-1: For tower leg mounting, the aluminum mounting bracket will have to be drilled to accept a U-Bolt (user supplied) to fit your particular tower leg or installation method. It should be noted that if your tower is of the "sectional" type (such as Rohn) then the bracket may be fitted to one of the sectional bolts by simply removing the nut and placing the bracket hole over the bolt and reinstalling the nut! In this case, no other hole need be drilled as one hole already exists on the mounting end of the sloper bracket.

( ) 3. The SULTRONICS SLOPER antenna should be installed at a point no higher than 40 feet above ground. Tower Installation heights ranging from 20 to 40 feet all seem to work very well. However, the antenna seems to exhibit best overall performance at a mounting height of around 30 feet.!

( ) 4. Refer to FIGURE-4: Using the dimension examples given in Figure-4 and the location of the proper tuning points shown in Figure-6, cut the wire elements of your sloper antenna based on the resonant frequency desired. Refer to Figure-3 regarding the method of measuring the element spans. Please note: it is wiser to leave each element slightly longer than specified to allow individual tuning after your antenna has been installed.

( ) 5. Refer to FIGURE - 2: for the manner by which the SSL inductors are re-attached to the element wires. Note that only one end of each SSL coil is a "tuning point" and as such this is the only connection that has to be remade for that particular band! Please note that initially the 160m. wire element can be shortened simply by folding the wire back onto itself at the end insulator.

( ) 6. Use a VOM to check for continuity from the coax connector center pin (at the mouning bracket to the tip end of the sloper antenna.

( ) 7. Attach the sloper mounting bracket to the tower leg (or other support structure). Employ a VOM to check for a low resistance path between the aluminum bracket and the tower leg (or other ground return system).

( ) 8. Arrange the sloper so that it will not be in close proximity to any guy wires or other wire antennas, as best as possible.

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( ) 9. Attach your coaxial feedline to the Amphenol SO-239 connector on the sloper mounting bracket. We highly recommend the use of good quality coaxial cable such as RG-213 however any good 50 Ohm cable will suffice! It would be wise to apply some "COAX - SEAL" or other equal weather-proofing agent to the feedline coaxial connection.

( ) 10. Refer to FIGURE -4: Tying of the lower (tip) end of the sloper should be done so as to allow a gentle slope angle between the antenna and the support structure. We suggest that the end of the sloper be mounted such that it is 8 to 9 feet above ground. Since there is RF voltage at the tip end of the antenna, this is done as a routine safety measure! Please note that a heavy duty polycarbonate insulator and special low-stretch nylon rope has been provided for use at the sloper end.

( ) 11. Refer to FIGURE - 6: TUNING
Tune the HIGHER friquency element first (40 meters). Then tune the 80 meter element, followed by the element for the 160! It is best to make at least two passes through, tuning the antenna. Since low "Q" inductors are used (instead of traps) there will be some interaction in tuning as each band is trimmed/adjusted. Look for resonance at the lower end of each band, initially. Then gradually trim each band element to increase this resonant point to that desired for your operation. Once again, the initial pass through desired for your operation. Once again, the initial pass through the antenna in tuning should be done so as to achieve resonance at the lower portion on each band. The use of the low "Q" inductors allows high RF power operation and much greater operating bandwidth than that possible with common traps. During this tuning process, remake connections to the SSL coils in the same manner as done previously - refer to FIGURE-2.

( ) 12. Resonance should be easily achieved on the 160 meter band. When properly tuned, there should be an obvious dip in VSWR at the resonant frequency on each band. If resonance in difficult to obtain on the 80 meter band, you may be trying to attach the mounting bracket too high on your support structure. The use of a good transmatch will allow full band coverage and let solid state transmitters to load fully.

( ) 13. The SSL coils have been coated at the factory with two coats of a special polyurethane with UV light protectant. They should not be coated with any other material. After having your antenna properly resonant, you might wish to wrap a small piece of "COAX-SEAL" around the bare copper wire ends at the bolt connection on each of the SSL coils. All hardware used is of 18-8 Stainless Steel, and requires no further protection.

( ) 14. Tape the sloper coaxial feedline to the tower leg at intervals along its length.

( ) 15. This completes the installation and tuning of your new SULTRONICS MULTI-BAND SLOPER ANTENNA!

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ILLUSTRATION PAGE - TRIBAND

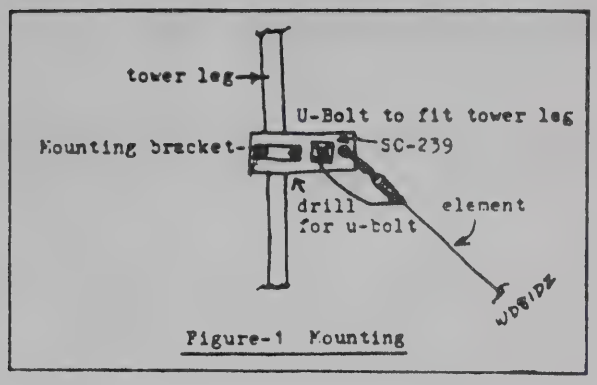


Figure-1 Mounting

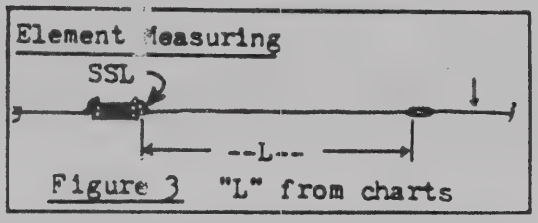
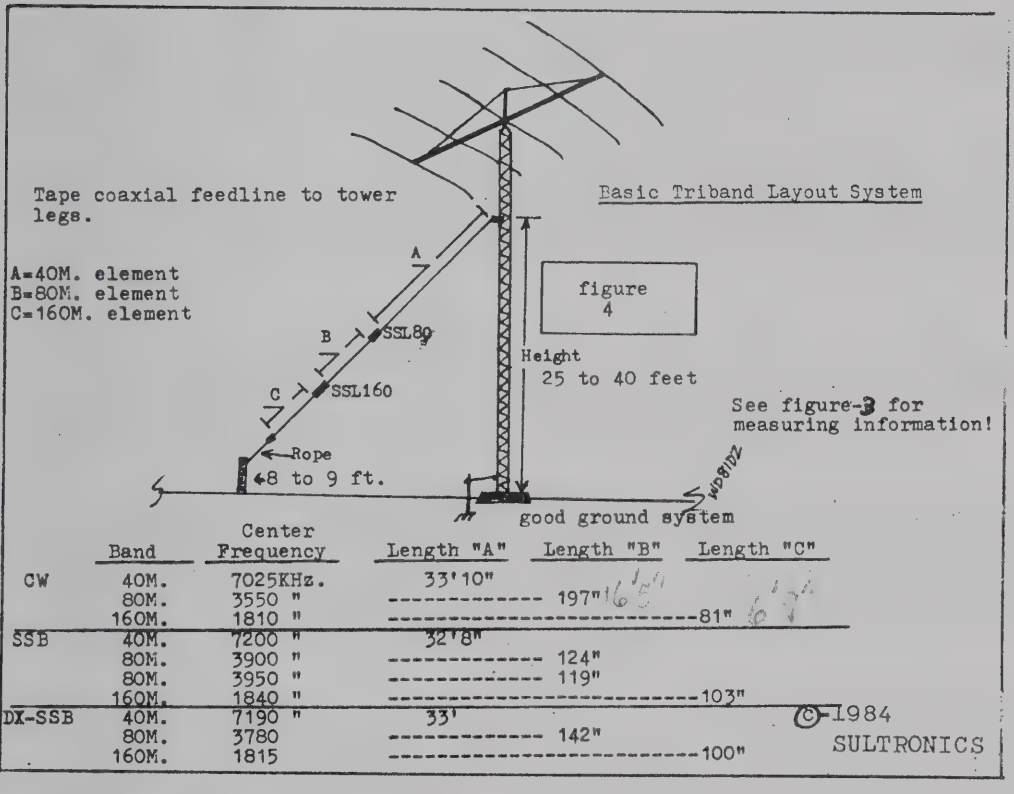


Figure 3 "L" from charts



	Band	Center Frequency	Length "A"	Length "B"	Length "C"
CW	40M.	7025KHz.	33'10"		
	80M.	3550 "		197"	
	160M.	1810 "			81"
SSB	40M.	7200 "	32'8"		
	80M.	3900 "		124"	
	80M.	3950 "		119"	
	160M.	1840 "			103"
DX-SSB	40M.	7190 "	33'		
	80M.	3780		142"	
	160M.	1815			100"

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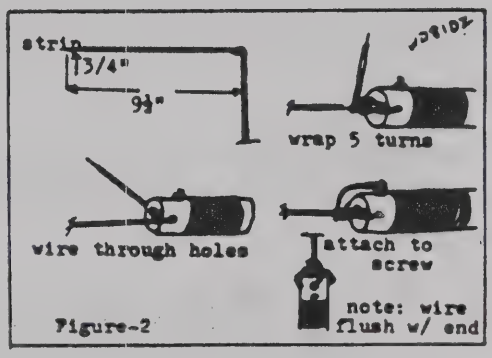

Figure-2

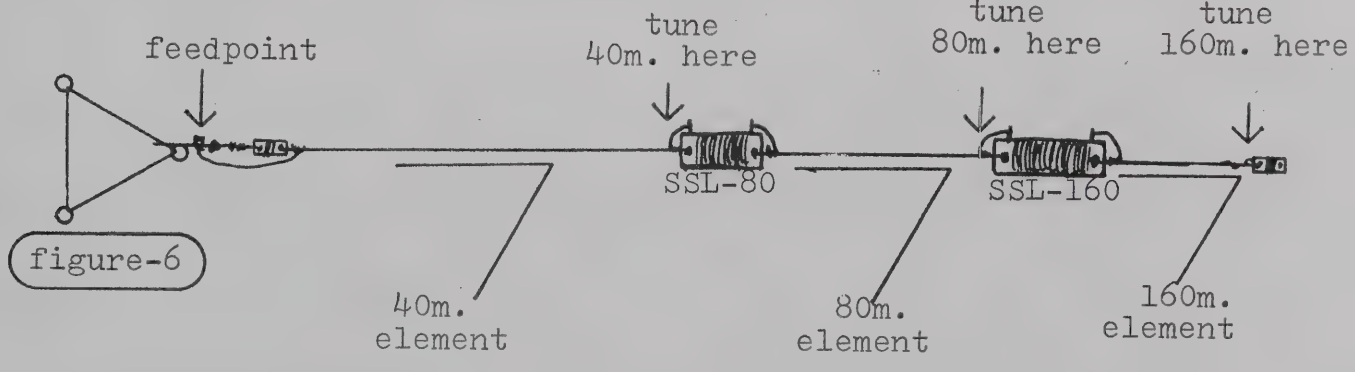

figure-6

TUNING SUGGESTION:
Clip each element approx. 3" at a time while tuning

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—SULTRONICS SLOPER HINKS & KINKS—

* If, during the tuning process, at first no resonance is found, be certain to check just below the edge of the bands. A general coverage receiver and RF noise bridge is very handy for this operation!

* For those interested: 450 Ohm ladder-line. One conductor may be soldered to the center pin of the SO-239 coax connector. The other ladder line conductor is attached by drilling a hole in the bracket and using a solder lug and bolt. In effect, this makes the sloper into an end fed "Zepp" antenna, and will allow coverage of all of the HF amateur bands!

* Please note that the SULTRONICS SLOPER antennas are efficient low angle radiators. These are true "DX" antennas!!

* For those using one of the newer transceivers equipped with a general coverage receiver, the SULTRONICS SLOPER will make a super SWL antenna, also! Since low Q inductors are employed (rather than traps), the entire shortwave spectrum will be covered by the use of our SLOPER.

* MARS user note: The SULTRONICS SLOPER will easily cover the MARS frequencies. If you should need technical assistance in getting your SLOPER on MARS please feel free to call our Technical Phone Line during regular business hours, (513) 376-2700.

* In a few rare cases, users have reported difficulty in finding resonance on the 80 meter band. Investigation of these cases has shown that in each case the coaxial feedline was approx. 60 to 65 feet long. As such, this length is approx. a quarter wavelength on 80 meters, and thus making it almost impossible to realize true VSWR figures when using a VSWR bridge installed at the "shack end" of the feedline!

* Other antennas and wires in very close proximity to the SLOPER may have a tendency to RF couple and "upset" one or the other (or all). Mounting the SLOPER bracket at a different height than other antennas and routing the SLOPER element away from other wires will correct this situation should it occur!

* "Crank-Up" type towers may need to have the ground return wire installed to the sloper mounting bracket, as was explained in the "Insulated Supports" section of this manuel.

* Should you ever need replacement parts or extra wire, please feel free to contact our office. We offer such parts at very nominal charges.

Once again THANK YOU and good DX'ing!!

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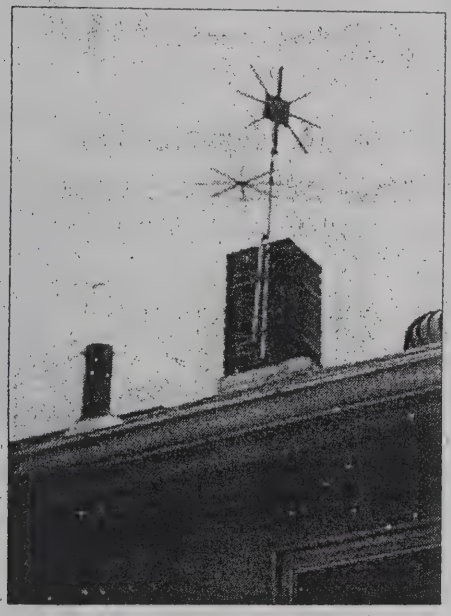
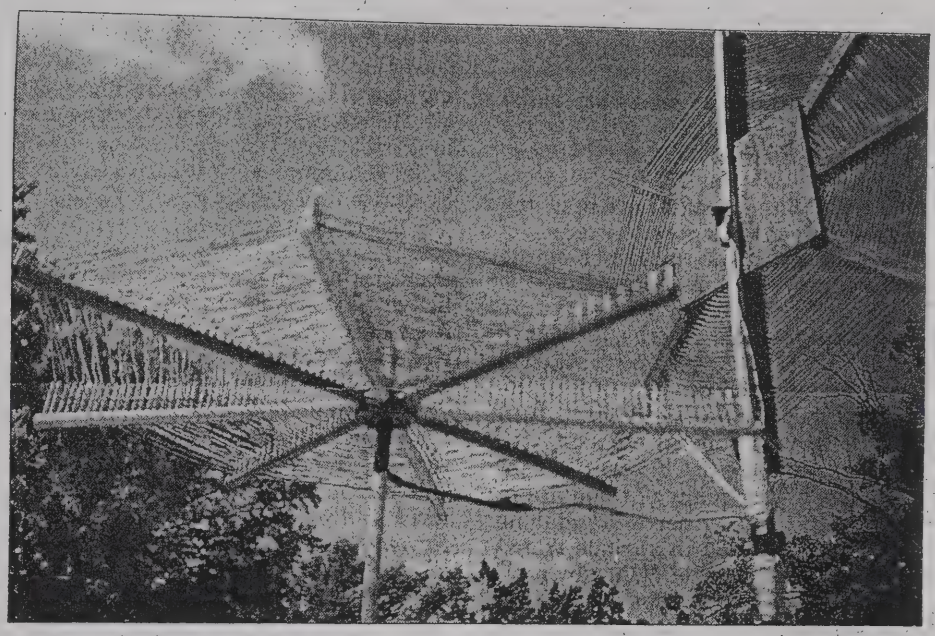
Variations on a "Petlowany"

Caldwell Sr., WA8ABE

Last March, a friend showed me an article from *Worldradio*, about a new type of antenna. He asked if this were possible, and could it work. Since it was such a radical difference from antennas as we know them, and since I have been around Amateur Radio since the early thirties, I agreed to experiment with it and to give a report to the local club.





Left and above photos show my variation of the Petlowany antennas mounted vertically and horizontally for testing on various bands.

This was my experience with the "Petlowany" antenna. First I found the reason the antenna went into antiquity was the difficulty in winding it. After winding several by hand, I decided to make a form to hold the windings. It doesn't matter whether the antenna is round, square, or octagonal other than some difference in wire length. As long as the windings are symmetrical and spaced evenly, the performance was the same. Size of wire had no effect on the perfomance other than power limitations with smaller sizes.

I have made more than a dozen of these antennas, all the way from 2 Meters to 160 Meters, and every one of them had the same characteristics. If the wire is measured for one quarter-wave plus a little, spaced evenly and symmetrically, the impedance will be near 52 Ohms.

I started by making square forms using 1/2" X 3/4" X 20" wood and forming a cross. I then drilled a 1/8" hole in the center, and drilled a 1/8" hole every 1/4". After drilling all the holes, I cut 1/8" dowel into pieces 1 1/4" long. I placed them in the holes and drove them into place with a hammer. If they were loose, I glued them in. I made a second form

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1130 RG213/U 95% shield mil spec NCV jkt	.36
1140 RG214/U dbl silver shld mil spec	1.85
1705 RG142B/U dbl silver shld, teflon ins	1.50
1450 RG174/U 50 ohm. 100" od mil spec	.14
1410 RG58/U mil type 50 ohm 95% shield	.12

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PL259TS PL259 teflon ins/silver plated	1.39
PL258AM Amphenol female-female (barrel)	2.25
UG175/UG176 reducer for RG58/59 (specify)	.22
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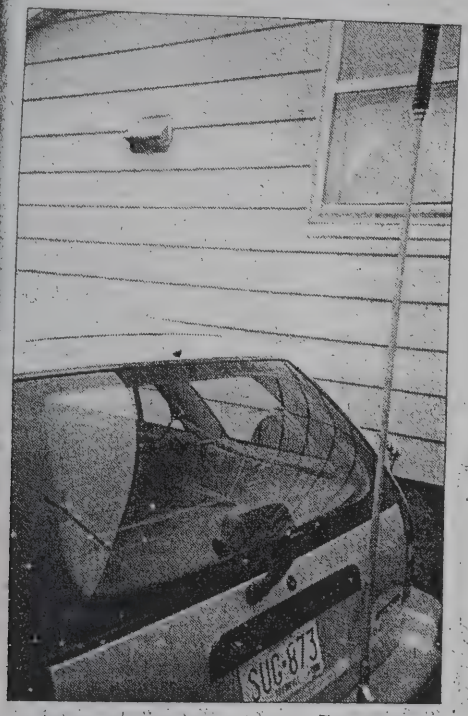
with the cross being 24" in total diameter to accommodate the longer wire for 160 Meters.

Starting at the center hole and proceeding to the end of the wire, stretching the wire as I went, made for a very sturdy antenna. The connections are simple. I soldered the center conductor to the center end of the wire and I either left the shield alone or hooked it up to ground. The ground can come by way of the transmitter end.



Good results were obtained by laying the antenna on the package shelf of the car.

The first antenna was wound with #26 telephone wire and was used on receive only, or with very low power. I used the smaller wire because it was easier to use and keep tight. I tested this antenna with an MFJ-259 antenna analyzer and with six feet of RG58U coax to test in the shack. I compared receiver "S" units with an inverted "Vee" with the apex at 35 feet. On 160 Meters, the inverted "Vee" brought a skimpy S-but the spiral antenna, at 20 feet high had a peak S3-4 on SSB.

For the second antenna, I used #14 house wiring with the insulation removed. At lower frequencies this antenna would not tune when in a vertical position, so I had to mount it horizontally. At higher frequencies, the orientation didn't seem to matter, however the impedance did go up while in the horizontal position. After using the #14 wire, and having difficulty maintaining parallel windings, I tried three #26 wires, twisted slightly and in parallel and found it much easier to work with. Three #26 wires in parallel allows the use of 100 watts.

After using these antennas, my mind wandered to mobile use. Since the mobile antennas have only 12 or so Ohms, maybe this "Petlowany" could be used for a counterpoise. I made a square "Petlowany" wound for 4 MHz and attached it to the ground of the mobile antenna base, laid it on the shelf of the rear window, and went mobiling to a hamfest 60 miles away. (The mobile antenna is an old Hustler center loaded which was for 40 Meters originally, but I rewound the coil for 15 Meters.) I turned the radio on, and the reading was flat at 21.360. The band was pretty busy for early morning. Stations were on from Yugoslovia, Germany and many other European countries.

My first contact was with W4ML, a special event station in Virginia and I received a 5-9 report. Next was YU4EBL, another special event station and another 5-9 report with "potent signal" added to it. A contest station in Germany, DK5EZ, was next, and another 5-9 report with "great mobile signal" added.

I've worked mobile for many years, but never got an answer almost every time I put my call in, especially in the middle of a pile-up. Because the "Petlowany" counterpoise brought the mobile antenna impedance to 50 Ohms, all the power was in the antenna. I removed the counterpoise and the answers stopped.

So, good enough for me, the "Petlowany" was a superior type of antenna. When some enterprising person gets it all together, this will be the next century's antenna, considering the widest antenna, for 160 Meters was only 24" wide.

I can't explain the characteristics of the antenna, nor the formulas for using it, but we've had many discussions in the club newsletter about it. I have given demonstrations of it at the meetings, and several of the guys are making their own, with good results.

Thanks to Bill Petlowany's father-in-law for being 100 years ahead of his time, to Bill for writing the article, and to ***Worldradio*** for printing the article. Not many magazines print articles without complicated math to confuse the masses. It was just a good down-to-earth article and with just enough information to make it interesting.

I'm still winding and experimenting, and will keep readers informed of any new developments.

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CUBEX

PARTS LIST

CUBEX MK III OR MK III-SF CUBICAL QUAD ANTENNA

Long Package

8 - Select ~~Bamboo~~ Poles FIBRE GLASS
8 - 14" ALUMINUM STUBS
1 - 2" Diameter x 8' (tubular aluminum) Boom

1 - 2" x 2 ft. Mast Stub

Corrugated Carton

2 - Cast Aluminum End Spider

2 - Aluminum Boom-to-Mast Mounting Brackets

2 - Coils No. 14 Wire, 20 Meter Elements

2 - Coils No. 14 Wire, 15 Meter Elements

2 - Coils No. 14 Wire, 10 Meter Elements

8 - 6" Loops No. 14 Wire

3 - Air Wound Reflector Tuning Coils

1 - INSULATORS (2 mfg [illegible] 2-in. spreader and one 4-in. spreader)

3 - Small Alligator Clips

16 - "Wraplock" Radial Clamps
24 - SURE TITE CLAMPS

4 - 5/16" - 18 x 1" Machine Screws and Nuts - Mounting Brackets

4 - 5/16" Lock Washers

1 - Set Assembly Instructions

NOTE Check the contents of both packages against the Parts List. Any shipping damage should be reported immediately to the delivering carrier (usually Railway Express) and claims for damage should be submitted to them

WE ADVISE READING THE INSTRUCTIONS THROUGH COMPLETELY BEFORE STARTING ASSEMBLY.

ASSEMBLY INSTRUCTIONS

CUBEX MK III OR MK III-SF 3 BAND QUAD

⊕ MK III-SF - TO ASSEMBLE FOR MK III-SF CONFIGURATION (for single feedline operation with all driven elements tied together at a common feedpoint as in Fig. 4) SEE SECT. "SF" PAGE 5 BEFORE PROCEEDING BEYOND STEP 2

⊖ MK III - FOR STANDARD MK III CONFIGURATION (see Fig. 3 for 3 separate feedlines or one feedline with remote switching system) SIMPLY FOLLOW STEPS 2 THROUGH 12 AND DISREGARD SECT. "SF" PAGE 5.

1. The finest imported bamboo poles available are selected for use as radial arms in the Cubex Quad. Some checking or cracking of the poles is unavoidable as this is an inherent property of bamboo. This cracking does not affect pole strength. To help eliminate weathering effects on the bamboo poles, it is advisable to apply one or two coats of spar varnish or a good grade of alkyd enamel. Sand bamboo surface lightly to give it a slight "tooth."

2. Begin antenna assembly by laying one of the aluminum castings on the ground with the Vee trough facing upward. Lay four bamboo poles in the Vees. Fasten the poles to casting arms using two "Wraplock" radial clamps on each pole. One clamp is located near the pole butt and one about 1/4 inch from the casting end and should be positioned in the indentations on under side of casting arm. The "Wraplock" clamps are assembled as follows: (1) With the screw facing upward, loop the strap around from underneath and insert it through the slot next to the screw. (2) With the clamp encircling the casting arm and bamboo pole, pull the strap up tight by hand and crimp it by bending sharply (away from the screw). (3) The clamp is tightened by turning the screw, but DO NOT TIGHTEN AT THIS TIME.

3. Uncoil a roll of wire marked 10 meters. CAUTION: DO NOT LOSE THE POINTS AT WHICH THE WIRE IS KINKED! These points must be straightened sufficiently to allow the wire to pass through the small holes in the bamboo radials. Be sure to leave enough "kink" so that it can later be centered in each bamboo radial before pulling the open element ends together at the insulator. (The kinks mark the 1/4 wave points). Start stringing the wire through the holes in the bamboo poles drilled for 10 meters. (These are the holes closest to butt end of poles). See Fig. 1. String the wire end "A" through two poles only, then working in the opposite direction with the other end "B" of wire, string the other two poles. Be sure each kink in the wire is centered in the pole. Put one of the egg insulators between the wire ends pulling the wire snug. Repeat the above steps

stringing a 15 meter coil of wire through the holes in the poles located about 8 ft from butt end. These are your driven elements for 10 and 15 meters. The bamboo poles are now pushed outward slightly to further tighten the wire. Do not tighten the wire to the point where poles bow. The "Wraplock" clamps should now be tightened. CAUTION DO NOT CRUSH POLES BY OVER TIGHTENING THE CLAMPS.

4. Repeat Steps 2 and 3 using the remaining end casting and poles. Slide a 1-inch diameter coil over the spreader insulators prior to tying the wire ends together. The short insulators and coils are for 10 and 15 meters, the longer pair for 20 meters. Solder one end of the coil to one end of an element wire. See Fig. 2. Leave the other end of the coil free. If you intend to perform a reflector tuning procedure, solder a small alligator clip to the remaining element wire end. If you do not intend to do this, solder remaining element wire end directly to the proper turn of the coil as stated in Step 10. Follow the above procedure for both 10 and 15 meters. These are your reflector elements.

5. Upon completion of Step No. 4, use the same procedure for assembly of the 20 meter elements with the following EXCEPTIONS:

a. The 20 meter elements are NOT strung THROUGH the holes in the bamboo poles. The element wire is uncoiled and laid out in approximate position. The insulators are then put into place at the open ends of the wire elements. For the reflector element - be sure to mount the reflector tuning coil on the insulator before securing open element ends to the insulator. The "kink" near the element ends should be placed at the insulator "eye." Place a 6-inch wire loop at each of the four corners of the element wire (catch the element wire in the "U" of the loops). Now feed one end of the loop through the small hole near the end of the bamboo radial. Start snugging up the element by pulling up on each corner in turn until evenly positioned and just snug (do not bow bamboo radials). Now wrap excess loop wires around the pole one or two times and twist securely.

b. The same procedure of coil and clip assembly is used for the 20 meter reflector as was used in the 10 and 15 meter reflector elements (Fig. 2).

6. Couple the boom to mast mounting brackets together using 5/16-in. by 1-in. bolts, lock washers and nuts. The "U" channels should be at right angles to each other. (See picture in brochure.) Slide the assembly onto the boom and center on boom length.

7. After both the driven element and reflector end assemblies are completed, lay one of them with the casting next to the ground (bamboo up) in preparation for attachment of boom. Before inserting the boom into the center hole of the casting, wedge the blade of a screw

driver into the slot of the casting to spread the center hole just slightly to allow easier entry of the boom. After the boom has been inserted, with the boom end flush with the front (or down) surface of the end casting, remove the screw driver and tighten the assembly securely with the 1/4-inch bolt through the base in the casting. Attach the remaining end assembly to the other end of the boom, being careful to align the end assemblies and boom to mast coupler so that driven element insulators and reflector insulators and coils will be in bottom position when the boom is mounted to the mast.

8. If your antenna rotor will not accommodate the 2 inch diameter mast, a short piece of 1½-inch water pipe may be reduced to a pipe size (using pipe reducer or bell fitting) that will fit the rotor. The outside diameter of 1½-inch pipe is slightly less than 2 inches, therefore the mast fitting will not tighten quite enough to prevent slipping. This may be stopped by drilling one or two 1/4-inch diameter holes through the aluminum "U" bracket and mast and pinning the two together with 1/4-inch machine screws.

9. See "Feed Line Information", page 5 for driven element impedances. Attach the co-ax feedlines (or 1/4 matching transformers if used) to their respective driven elements. Connect outer shield braid of co-ax to one open end of driven element wire and the inner conductor to remaining open end of driven element. This feedline connection should be made in such a manner that all strain taken by the joint is on the shield braid outer conductor rather than the more fragile inner co-ax conductor. Cable routing from antenna to mast is optional. It may either be pulled up vertically to the boom and across boom to mast, or run horizontally directly to the mast. The individual lines should be separated from one another rather than bunched together.

10. Reflector coils for both 10 and 15 meters should be tapped with 9 turns of the coil in series with the reflector element. The 20 meter coil is tapped at 12 turns. See Fig 2. This will be very near optimum front-to-back-ratio. To be sure of optimum front-to-back ratio in your location, the antenna may be tuned as follows: turn reflector element towards a steady signal (another ham station, etc.) on the band being tuned, move the clip above and below the number of turns stated about 1/2 turn at a time until receiver "S" meter reading is minimum, remove alligator clip and permanently solder element wire to coil. Coil tuning adjustments can be made, if necessary, before the antenna is installed on a tower if it is reasonably clear of ground.

11. The antenna is now ready to be mounted on mast or tower. CAUTION: In handling the assembled antenna, it must be borne in mind that while the end spider castings are ruggedly designed, there is a practical limit to the strain they will withstand. Care must be exercised to avoid catching the ends of bamboo radial arms in tree limbs, under eaves or dropping the assembled unit. A force applied at the

very end of the 12-ft radial arms is multiplied many times at the casting end of the bamboo and can easily snap off the casting arm. Such a force will usually be far in excess of normal wind loading which is distributed evenly over the length of the bamboo radial arm.

12. Coupling to Transmitter: When using coax feed lines, they can be fed directly from the Pi-section output found in most commercial amateur transmitters. For transmitters with balanced output, the antenna may be fed with balanced transmission lines or Balun coils may be used to couple balanced output of a transmitter to unbalanced feedlines (co-ax).

IF DIFFICULTY IN LOADING OR HIGH SWR IS ENCOUNTERED

The line should be shortened in steps of 10 to 12 inches to start with, and succeeding amounts taken off should be reduced as favorable loading is approached. If feedline is only long enough to reach transmitter (none to spare for trimming) add an electrical quarter wavelength (246/freq. in mc x velocity factor of line = length in feet), then cut back as above. If an SWR measuring device is available, it will provide a visual means for observing results of line trimming.

SECT. "SF"

Assembly of the MK III-SF deviates from that of the standard MK III only with respect to the DRIVEN ELEMENT array.

For driven element assembly, follow the standard MK III instructions through Step 2. For Step 3, start with the 15-meter driven element wire (rather than the 10 meter as per the MK III instructions) and string through the holes in the bamboo radials which are located about 3 ft out from the butt ends. The method of assembly is exactly as stated in Step 3 - string wire through four poles and bring together at an egg insulator and secure. See Fig. 4.

Next the 10 meter driven element is strung through the holes closer to the butt ends of the poles, but instead of bringing the ends together at a separate insulator, these ends are taken down to meet at the 15 meter feedpoint insulator.

See Step 5a for the stringing procedure for the 20 meter wire. Again instead of terminating its ends at a separate insulator, they are brought up to the 15 meter feedpoint insulator. A neater joint results if the 10 and 20 meter element ends are put through the loop made by the 15 meter wires at the outer ends of the insulator rather than feeding all wires through the insulator holes. Be sure the wire ends are clean before soldering the joints. The single feedline is now attached at this common feedpoint.

REFLECTOR ELEMENTS. For assembly of these elements the MK III instruction steps may be followed exactly. The final two sentences of Step 9 and the Feedline Information below do not apply for MK III-SF.

FEEDLINE INFORMATION

METHOD NO. 1 . . . . . DIRECT FEED . . . . . 3 LINES

14 Mc	52 Ohms	RG58/U or RG8/U feedpoint to transmitter
21 Mc	125 Ohms	RG63/U feedpoint to transmitter
28 Mc	75 Ohms	RG59/U or RG11/U feedpoint to transmitter

METHOD NO. 2 . . . . . MATCHING FOR 52 OHMS . . . . . 3 LINES

14 Mc . . . 52 Ohms: Direct match with RG58/U or RG8/U

21 Mc . . . 125 Ohms to 52 Ohms: Use 7 ft 7 in. of RG59/U or RG11/U connected to antenna feedpoint - then RG58/U or RG8/U for balance of run.

28 Mc . . . 75 Ohms to 52 Ohms: Use 7 ft 2 in. of PARALLELED RG63/U (two 7 ft 2 in. lengths tied in parallel - center conductor to center conductor and shield to shield at each end) connected to antenna feedpoint, then RG58/U or RG8/U for balance of run to transmitter.

Standard MK III Driven Element Configuration for 3 separate feedlines or remote switching

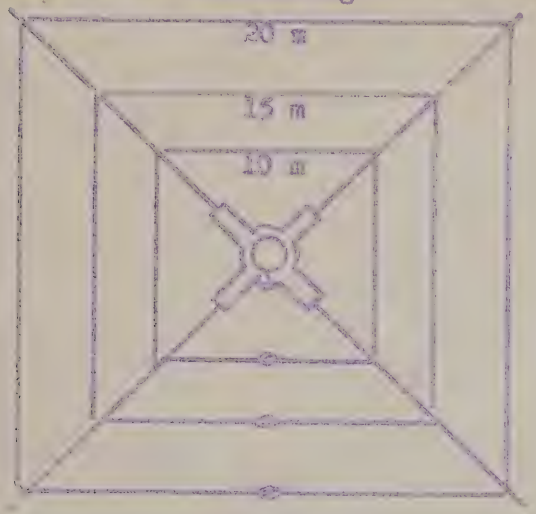


FIGURE - 3

MK III-SF
DRIVEN ELEMENT CONFIGURATION

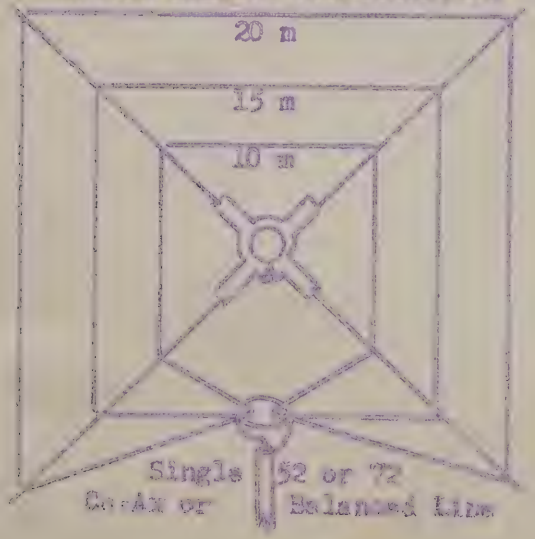


FIGURE - 4

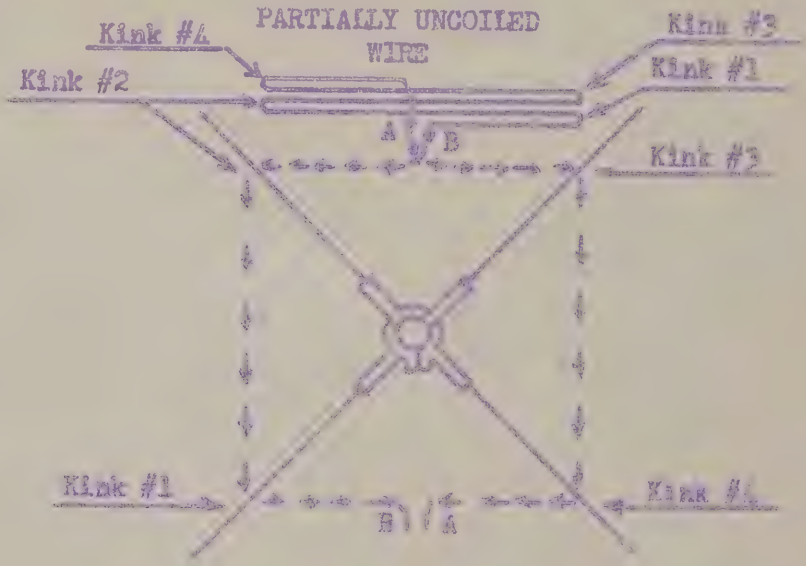


FIGURE 1 - WIRE STRINGING PROCEDURE

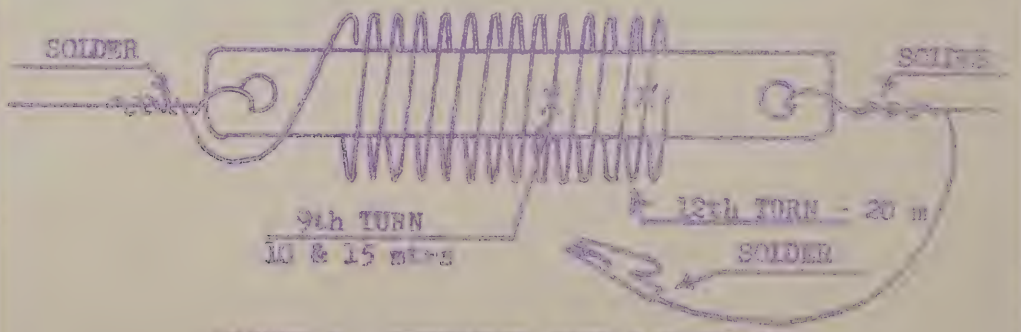


FIGURE 2 - REFLECTOR COIL & INSULATOR ASSEMBLY DETAIL

CUBEX MK III THREE BAND QUAD

Feed-Line Information

METHOD 1 . . . . DIRECT FEED . . . . . 3 LINES:

14 Mc . . . . 52 ohms . . . . RG58/U or RG8/U

21 Mc . . . . 125 ohms . . . RG63/U

28 Mc . . . . 73 ohms . . . . RG59/U or RG11/U

METHOD 2 . . . . MATCHING FOR 52 OHMS . . 3 LINES:

14 Mc . . . . 52 ohms . . RG58/U or RG8/U
(Direct Feed - No Xfmr Needed)

21 Mc . . . . 125 ohms to 52 ohms: Use 91 inches of RG59/U or RG11/U connected to antenna feed point - then RG58/U or RG8/U for the balance of run to transmitter.

28 Mc . . . . 73 to 52 ohms: Use 86 inches of PARALLELED RG63/U (two 86 inch lengths of RG63/U tied in parallel ... center conductor to center conductor and shield to shield at each end) connected to antenna feed point; then RG58/U or RG8/U for the balance of run to transmitter.

* This would be best system for the Collins match. If you should opt to consider single feedline w/ remote switching see enclosed schematic for "Home Brew" system — or TS 4 Tenna Switch "ready to go" (as shown back side of order blank)

section. It should be removed through the butt [large] end of the 93" section and assembled as shown in sketch at right [butt end of 53" sect into small end of 93" sect.]. It should be positioned so that the black marker line is just touching the end of the 93" section and then rotated so as to align the inner and outer holes drilled to take the wire elements [in some arms this hole may be in the 53 inch section only]. The joint should then be secured with one "Sure-Tite" Clamp.

The butt end of the 93" section should be fitted into the slotted end of the 15" aluminum section to the point where the black marker line just meets the end of the aluminum. The joint should then be secured with two (2) " Sure-Tite " clamps.

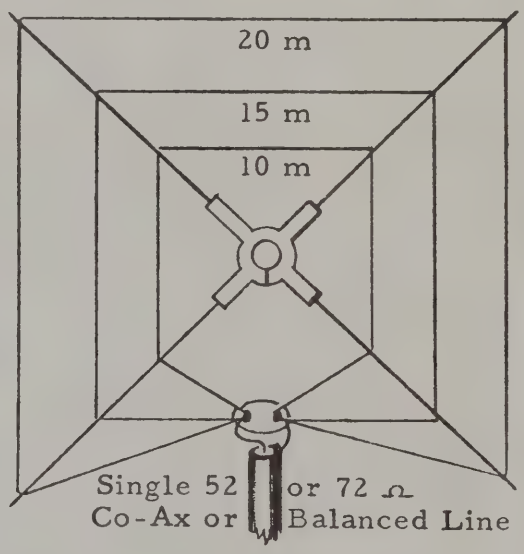
NOTE: These Fiberglas Arms are extremely durable but not completely indestructible! [It is possible to crush the tubing through unequal circumfrential loading . . . or break by extreme bending] Therefore, reasonable caution should be exercised in handling.

Single Feedline

OPERATION OF THE CUBEX MK III AND MK III-FG QUADS

Two types of SINGLE FEEDLINE operation are possible with the CUBEX MK III and MK III-FG Quads. One system employs remote switching while the other method simply ties all driven elements together at a common feedpoint to which a single co-ax or balanced feedline is attached.

THE SYSTEM WHICH TIES ALL THREE DRIVEN ELEMENTS TOGETHER at a common feedpoint is simple and very effective. It is shown in the sketch at right. The SWR in this sytem will generally run just slightly higher for one or possibly two of the bands than it would in a system employing separate transmission lines or one using single feedline with remote switching. Many MK III users report excellent results with this system. The MK III and MK III-FG are so designed that they may easily be assembled for operation with either this type of single feedline or one using remote switching, or for the conventional installation using three separate feedlines. Complete details are furnished in the instructions which accompany each antenna.



SINGLE FEEDLINE WITH REMOTE SWITCHING. The MK III and the MK III-FG may be installed for operation with either a commercially made or a home-built remote switching system. The Model TS-4 TENNA SWITCH (illustrated and described on back of order blank sheet) is capable of remotely switching 4 separate antennas (3 bands of a MK III plus additional circuit for 2 mtr, 6 mtr unit, etc. on same mast assembly). The weatherproof remote unit of the TS-4 mounts to the boom of a MK III Quad and 3 lines from the 10-, 15-, 20-meter driven elements are run to it (co-ax matching sections are used between 10 and 15 meter feedpoints and remote unit to transform to 52 ohms. Dimensions for these are in MK III instructions and Brochure). A single 52 ohm (or 72 ohm if desired) is run from the remote to transmitter. The control unit uses inexpensive 4 wire line (between control and remote units) to switch 3 bands; 5 wire line to switch 4 bands. The remote unit employs 2 ceramic decks to switch both sides of the line, providing complete isolation between bands of the MK III. These units are performing satisfactorily in installations running up to a full KW power. The remote switching system of single feedline operation maintains the desirable features of the "separate feedline" system (only one band connected to the xmtr at a time, etc.) while offering the economy and convenience of a single feedline. The TS-4 is offered as an accessory item and is listed on the order blank. CUBEX will gladly supply a schematic of a remote system using relays for those who wish to build their own.

NOW CUBEX COMPANY

Offers a

a new product

QUAD FOUNDATION KIT

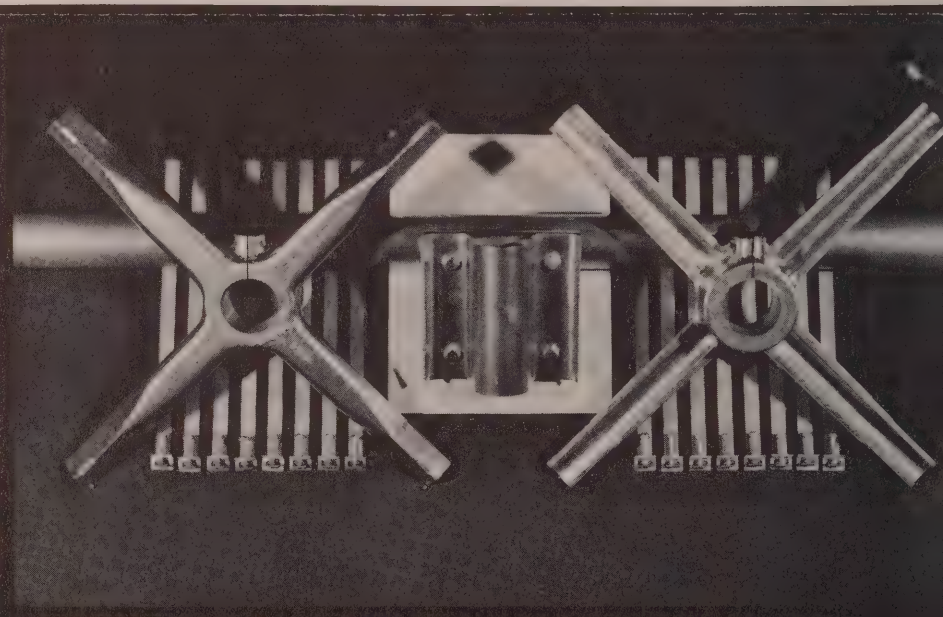
for do-it-yourself QUAD builders

RUGGED DESIGN

This is the same support structure used in the CUBEX MK III DeLuxe Tribander. Two husky cast aluminum alloy End Spiders with universal Wraplock Clamps to accommodate either bamboo, aluminum tube, or fiberglas radial arms. A heavy formed aluminum alloy Boom-Mast Coupler. Rugged 2 inch diameter by 10 foot Tubular Aluminum Boom (cut it to 8 ft and have a 2 ft mast stub or use full 10 ft).

EXTREME FLEXIBILITY

Build single, dual or tri-band quads with optimum element spacing on each band. New spider design allows positioning element assemblies anywhere along length of boom. Add a third element (director) merely by using another spider and longer boom. Easily adaptable to any quad design.



EASY ASSEMBLY Complete detailed assembly instructions with each kit include many quad-building hints and general quad information. Also includes reference list of Quad articles published in QST and CQ.

Kit contains:

- 2 - Cubex heavy duty end spiders (new design)
- 1 - 10 ft by 2 in. O. D. boom (other lengths - special order)
- 1 - Cubex boom-mast coupler
- 16 - Wraplock spreader arm clamps
- 1 - Set of assembly instructions (including general quad building information)

Complete Kit for **$27.50**

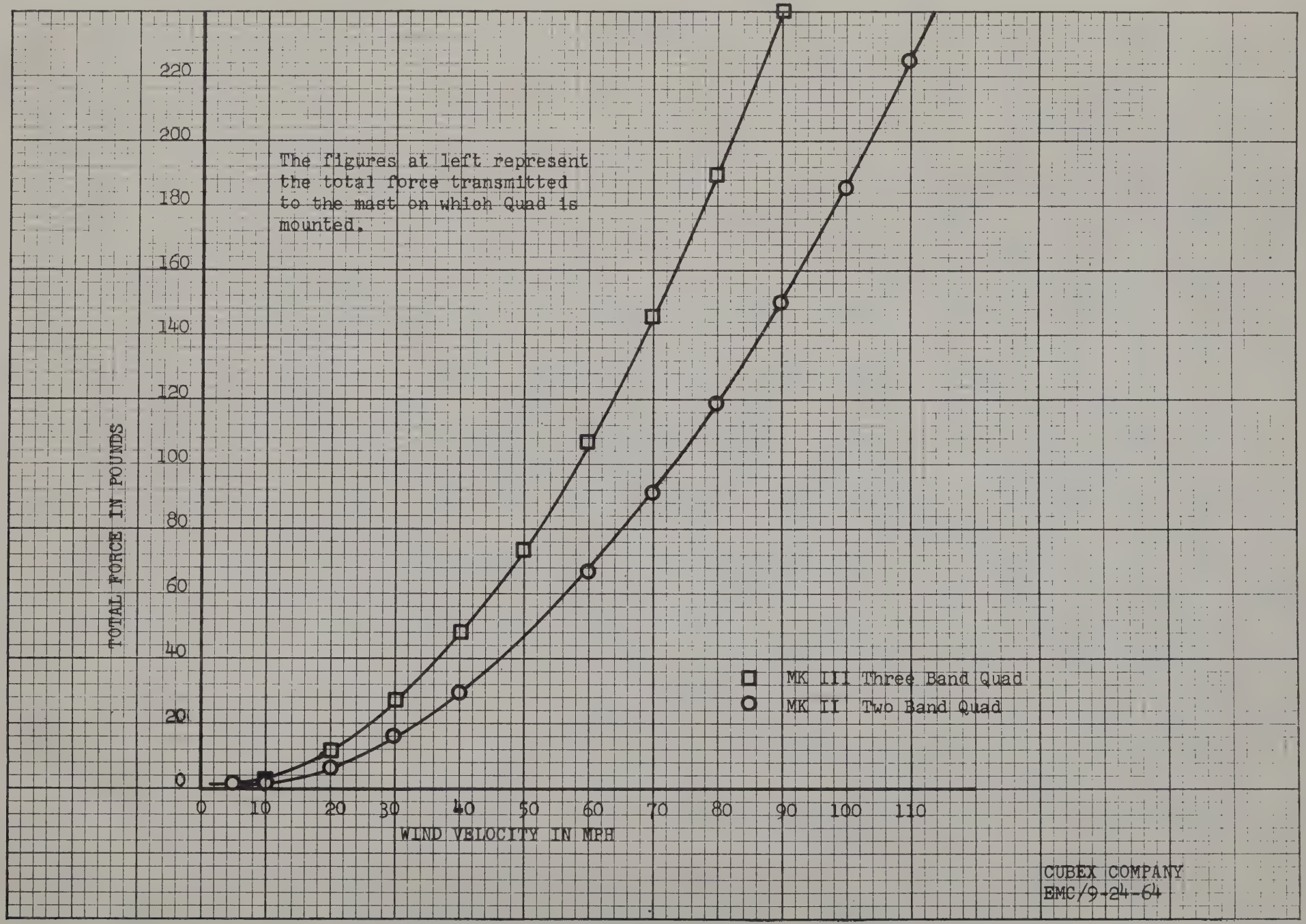
End Spiders only (with clamps) → $7.95 EACH

Order Direct from

CUBEX Co.

P. O. BOX 732, ALTADENA, CALIFORNIA

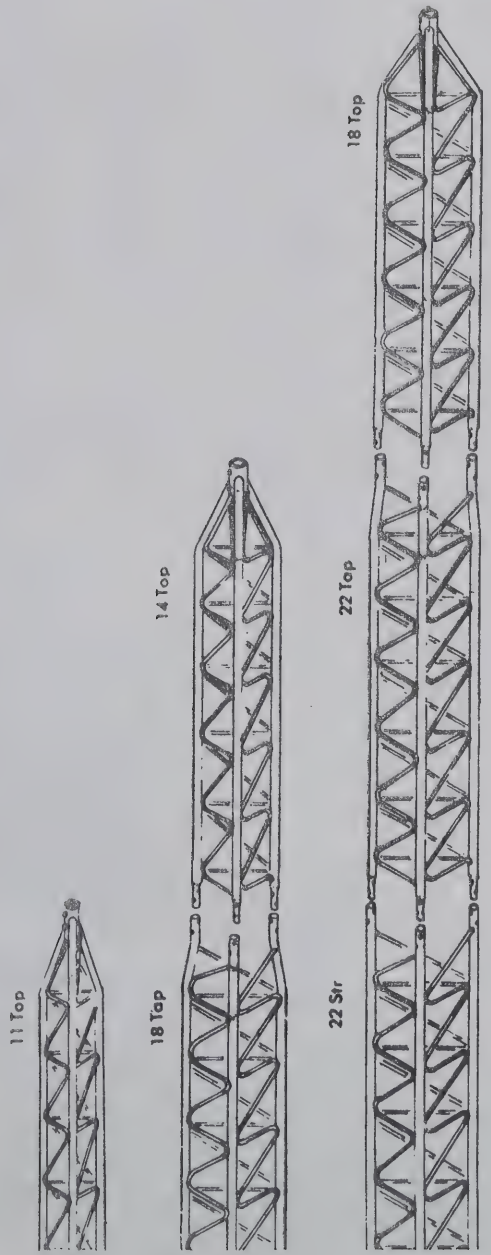
Shipments via Railway Express with charges collected at destination. C. O. D. orders require 30% deposit. QFK shipping weight 12 lbs. Spiders alone shipped pp. Include postage for 3½ lbs per spider--excess refunded.


The figures at left represent the total force transmitted to the mast on which Quad is mounted.
TOTAL FORCE IN POUNDS
0
20
40
60
80
100
120
140
160
180
200
220
0
10
20
30
40
50
60
70
80
90
100
110
WIND VELOCITY IN MPH
MK III Three Band Quad
MK II Two Band Quad
CUBEX COMPANY
EMC/9-24-64

UNIVERSAL TOWERS

Universal Manufacturing Co. 43900 Groesbeck Hwy. Mt. Clemens, MI 48043 (313) 463-2560 FAX (313) 463-2964

FREE STANDING ALUMINUM TOWER



MODEL NO.	HEIGHT FT.	WIND LOAD SQ. FT.			WEIGHT LBS.	SECTIONS WHICH COMPRISE TOWER (Str - Straight Tap - Taper)	BASE
		A	B	C			
4-30	30	4.5	2.5	1.5	38	14 Tap 11 Str 11 Top	B14
9-30	30	9.	6.5	5.	55	18 Tap 14 Tap 11 Top	B18
12-30	30	12.	8.	5.5	72	18 Str 18 Tap 14 Top	B18
21-30	30	21.	15.	11.5	77	22 Tap 18 Tap 14 Top	B22
23-30	30	23.	16.	12.	99	22 Str 22 Tap 18 Top	B22
35-30	30	34.5	25.	19.	112	26 Tap 22 Tap 18 Top	B26
4-40	40	4.5	2.5	1.5	68	18 Tap 14 Str 14 Tap 11 Top	B18
7-40	40	7.	4.	2.5	85	18 Str 18 Tap 14 Str 14 Top	B18
9-40	40	9.5	6.5	5.	89	22 Tap 18 Tap 14 Tap 11 Top	B22
12-40	40	12.	8.	5.5	106	22 Tap 18 Str 18 Tap 14 Top	B22
15-40	40	15.	10.	7.	111	22 Str 22 Tap 18 Tap 14 Top	B22
21-40	40	21.	15.	11.5	124	26 Tap 22 Tap 18 Tap 14 Top	B26
23-40	40	23.	15.5	11.	146	26 Tap 22 Str 22 Tap 18 Top	B26
4-50	50	3.5	1.5		97	18 Str 18 Tap 14 Str 14 Tap 11 Top	B18
5-50	50	4.5	2.5	1.5	101	22 Tap 18 Tap 14 Tap 11 Str 11 Top	B22
7-50	50	7.	4.	2.5	118	22 Tap 18 Str 18 Tap 14 Tap 11 Top	B22
9-50	50	9.	6.5	5.	123	22 Str 22 Tap 18 Tap 14 Tap 11 Top	B22
15-50	50	15.	10.	7.	158	26 Tap 22 Str 22 Tap 18 Tap 14 Top	B26
16-50	50	16.5	10.5	7.	171	26 Str 26 Tap 22 Tap 18 Tap 14 Top	B26
4-60	60	3.5	1.5		131	22 Tap 18 Str 18 Tap 14 Str 14 Tap 11 Top	B22
6-60	60	6.	2.5	.5	153	22 Str 22 Tap 18 Str 18 Tap 14 Str 14 Top	B22

This base may be used only with 237 & 354 models

Use 1½ x exposed framework with cylindrical surfaces taken at ⅔ the projected area.

Wind at 15#/ft² (Conforms to U.B.C. & L.A.City requirements)

(See computations for HZ-471 & HZ-354 for loadings)

For 354: Bending moment at base of tower = 14,000'# Horiz. load = 521#

In Section #7 use 1"ϕ x .065" insert 17'-0" long plug-welded as described for Section #7 in HZ-471 computations: X-brace as indicated for Sections #6 & #7 in HZ-471 models

Vc in tower leg = 10,700#

Check transfer from tower leg to T.B.C. base:

Use 1"ϕ bolt, 3/8" ear on tower; 3/8" base piece (Bearing governs)

Allowable = 7.50 x 4/3 = 10^k Use 1-1"ϕ bolt each leg

Welding req'd = 10,700 / 3.5 = 3060#/in Use ¼" fillet both sides

Area provided in tower legs = .242 + .191 = .433 sq.in. Use ¾"ϕ reinf.

Check bond = 10,700 / (2.96 x 140 x 4/3) = O.K.

Try 2'-6" x 2'-6" x 8'-0" footing:

Check as beam: $f_s = \frac{14000 \times 12}{.44 \times 1.75 \times 21} = 20,800$ psi < 20,000 x 4/3

Soil pressure (max.) = 9.36 x 14,000 / 2.5(8-1)² = 1070#/ft²

Assume allowable = 125#/ft²/ft depth = 125 x 8 = 1000#/ft² OK.

For 237: Bending moment at base of tower = 5630'# Horiz. load = 303#

Vc in tower leg = 5110#

Check transfer from tower leg to T.B.C base:

Use ¾"ϕ bolt, ¼" ear on tower, ¼" base piece (Bearing governs)

Allowable = 3.75 x 4/3 = 5^k Use 1-¾"ϕ bolt each leg

Welding req'd = 5110 / 3.5 = 1465#/in Use ⅛" fillet both sides

Use ¾"ϕ reinf. as standard

Try 2'-3" x 2'-3" x 6'-0" footing:

As beam, O.K. by inspection

Soil pressure (max.) = 9.36 x 5630 / 2.25(6-1)² = 940#/ft²

Assume allowable = 125 x 6 = 750#/ft² N.G.

Use 2'-6" x 2'-6" x 6'-6" footing:

Max. soil pressure = 9.36 x 5630 / 2.5(6.5-1)² = 695#/ft²

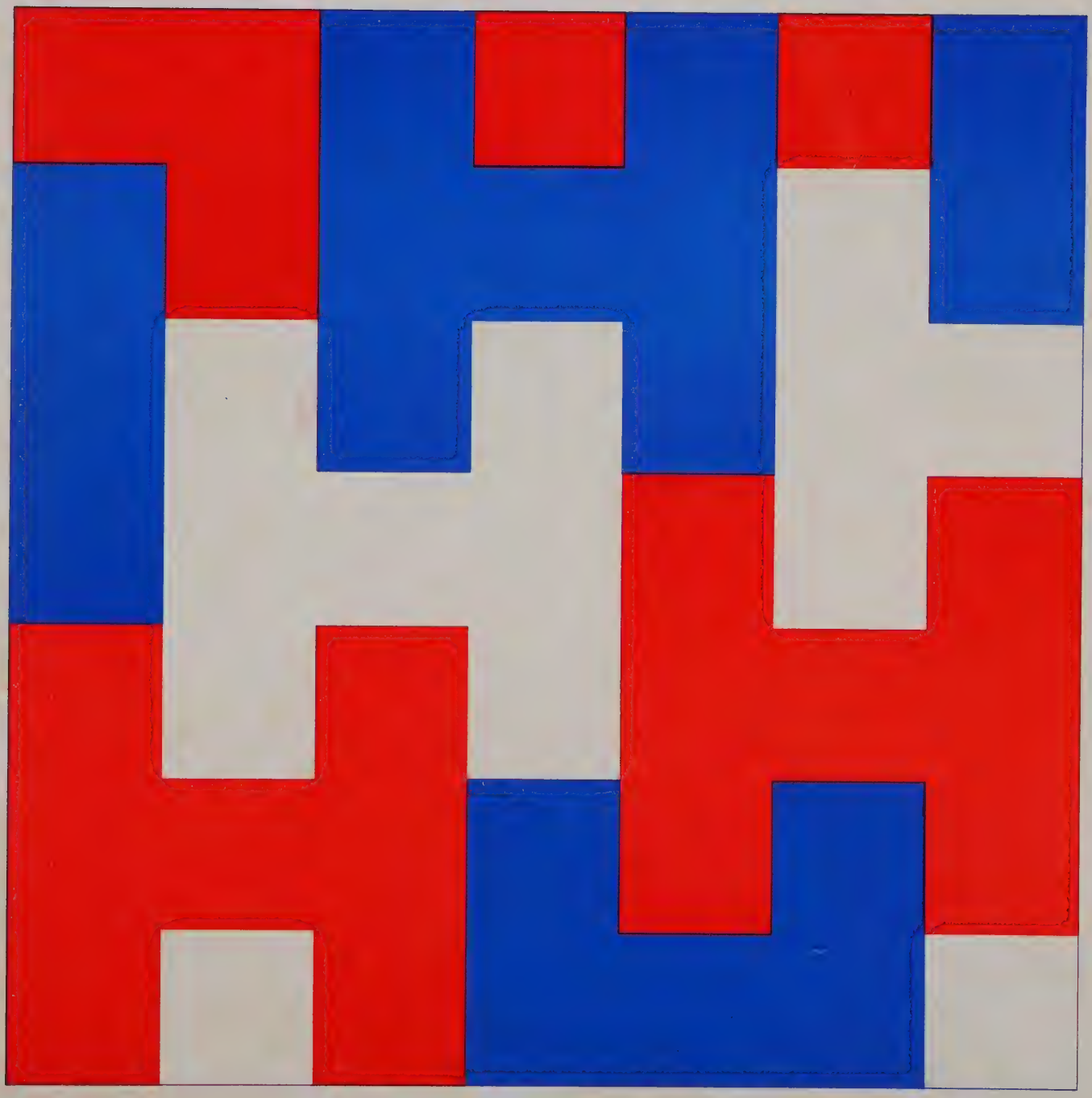
ALBERT A. DORMAN CONSULTING ENGINEER HANFORD, CALIFORNIA	TRI-EX TOWERS T-B-C BASES	DATE 11-57 BY	SHT. 1 OF 1

7-25-78

JUN 1 1978

Rohn® Ham Tower Catalog

$2.00



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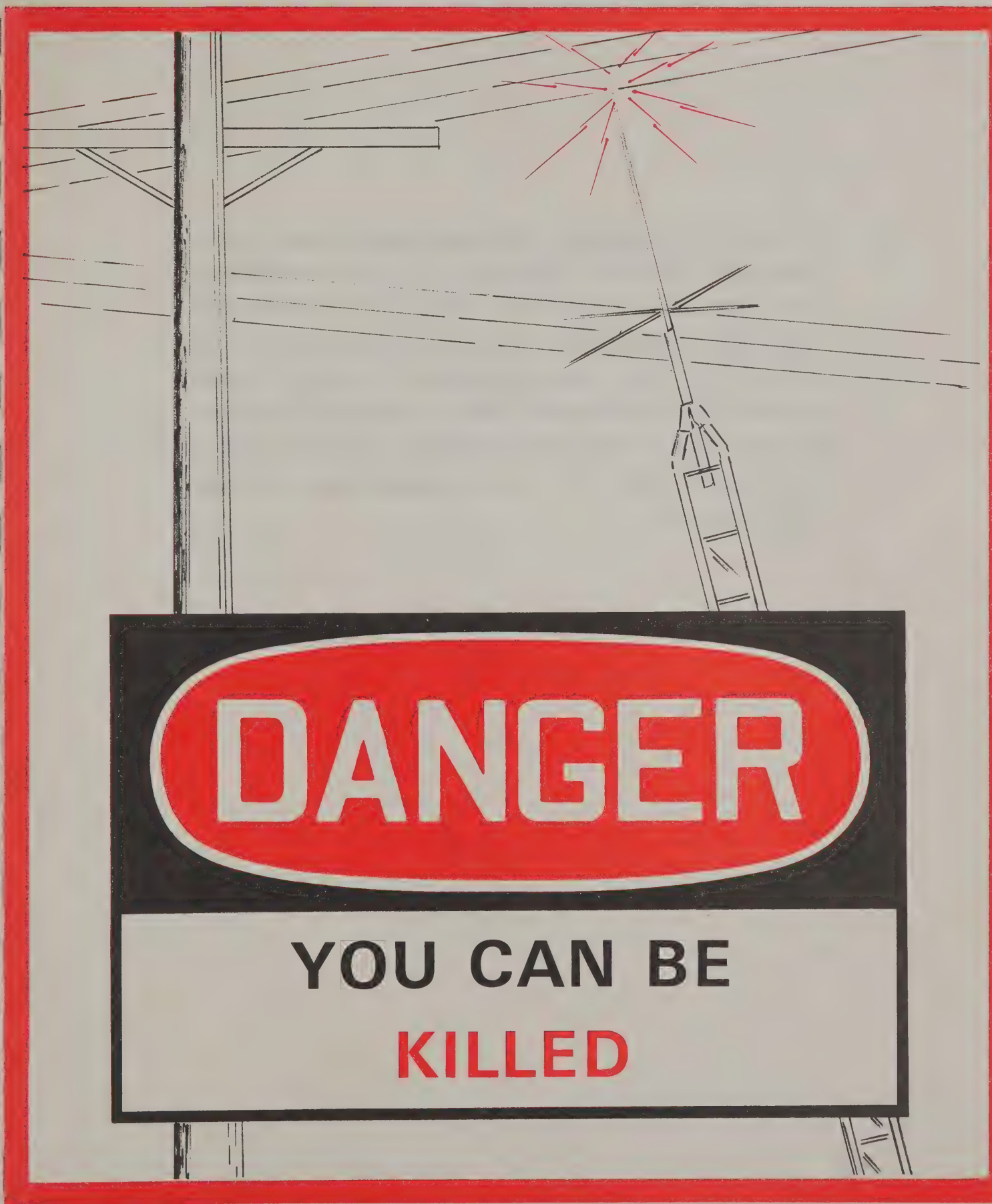
DANGER
YOU CAN BE
KILLED

If you are installing a CB base antenna and tower yourself — DO NOT attempt to raise the installation near any type of power line. Should your installation come into contact with any power lines *you can be KILLED.* Be sure your installation is out of falling distance of any overhead wires — including the lead to your home. Read all instructions carefully before you begin or better yet — call a professional — It May Save Your Life.

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WARNING NOTICE

Installing and rigging towers, masts, and antennas requires specialized skills and experience. Information supplied by Unarco-Rohn assumes that all products will be installed by personnel having these skills and have installed similar products before. No one should attempt to install towers or masts without these skills and experience.

Unarco-Rohn assumes no liability if faulty or dangerous installation practices are used. There are available, trained, and experienced personnel to assist in installation, maintenance, or disassembly. Contact your local installer if consultation or assistance is required.

All antenna installations must be grounded per local or national codes.

All towers and antenna installations should be thoroughly inspected at least twice a year by qualified, experienced, and trained personnel to insure proper performance and safety standards.

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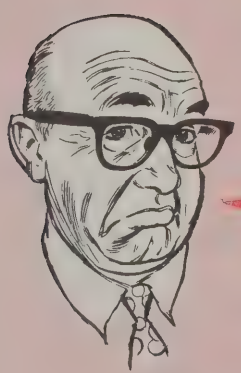
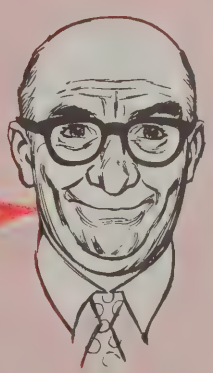
Form No. 77929



We've said it before...

We say it again...



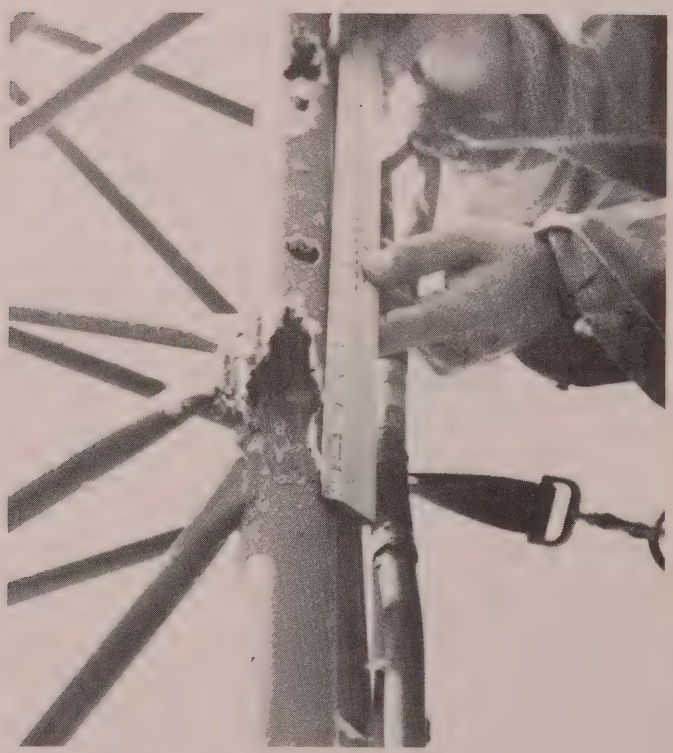
"There is a DIFFERENCE

Here's an actual example of a competitive tower after 5 years

"THEIRS"

In 1959, the Department of Highways of the State of Louisiana, purchased and had installed 7 communication towers fabricated by XXX Co.

In 1964, approximately 5 years after installation, these towers *(pictured here)* had to be replaced because of serious and obvious corrosion and rust. In fact, as clearly seen, the towers were unsuitable for further service and presented a dangerous situation. Subsequently, they had to be removed . . . and in doing so, it was reported that the towers were so badly corroded that they could not be disassembled, but rather had to be toppled by cutting the guy wire at the anchor rod.



While corrosion and rust are natural occurrences from water, proper zinc galvanizing is an excellent preventative. But *poor quality* or *improper galvanizing*, or *short-cuts* in the galvanizing process, result in drastically shortened tower life and a very poor length of service.

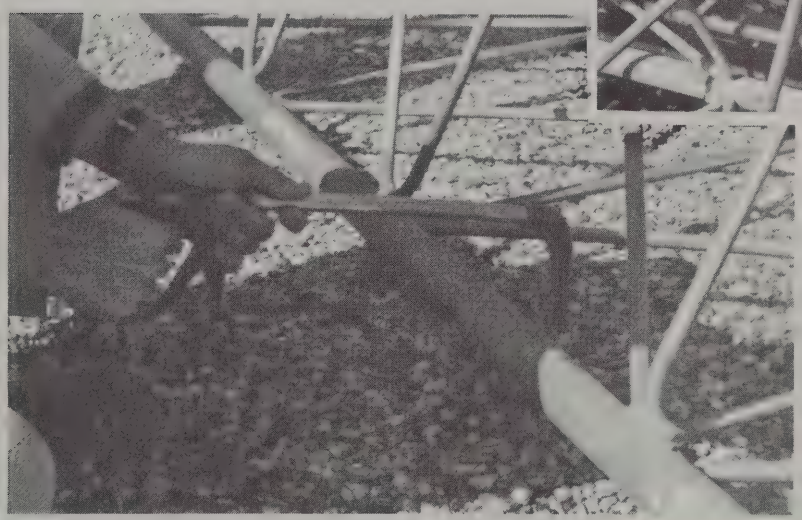
in Tower Galvanizing!"

and a ROHN Tower after 9 years...

"OURS"

In 1964-65, after the XXX Co. towers were taken down, they were replaced with 7 Model 65G **ROHN Hot Dip Galvanized towers.**

NINE YEARS LATER, in April, 1974, a single **ROHN tower** of this group was dismantled. The photos on this page are of that tower, indicating the striking preservation of the steel . . . *without rust or corrosion of any kind.*



A section of steel was then deliberately sawed from one of the tower legs *(shown in the photo)* in order to inspect the *interior* of the legs.

The results are clearly shown in this unretouched photo *(below)* indicating no visible corrosion or breakdown of the steel.

AFTER 9 YEARS, THE ROHN TOWER WAS READY FOR FAR LONGER AND CONTINUED SERVICE, THANKS TO A SUPERIOR GALVANIZING JOB!

ROHN TOWERS

have always been quality Hot Dip Galvanized in-house and on-the-premises for absolute and complete quality control. The following page shows this process in detail . . . *"the ROHN way".*

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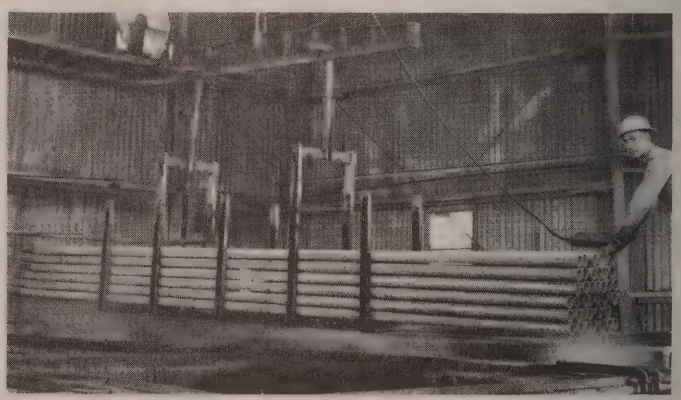
ROHN® IN-HOUSE "Quality Control" Galvanizing

means extra value for you!

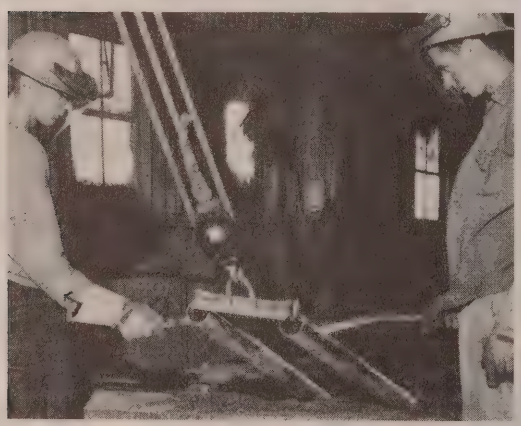
CORROSION RESISTANT: Hot-dipped zinc galvanizing means that ROHN Products are absolutely corrosion-resistant. A minimum molten zinc coating of *2 ounces for every square foot of surface fuses permanently* to the metal, becoming an actual part of the steel so it cannot be separated. Also the tubular steel used in ROHN Towers is coated both *inside* and *outside* to give absolute protection against deterioration from condensation and moisture.

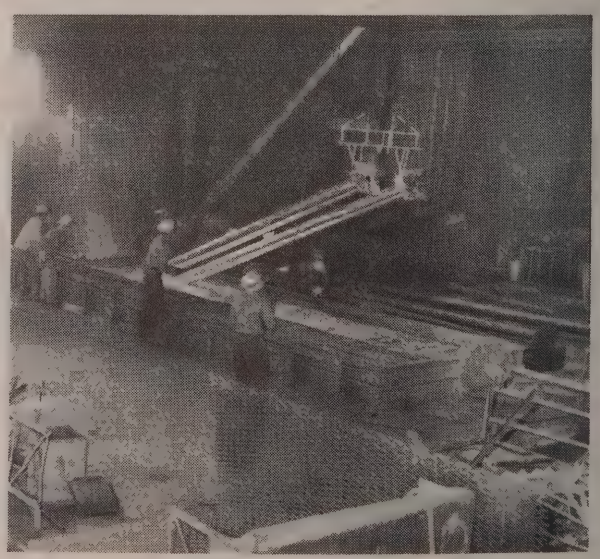
CHIP AND SCRATCH PROOF: If a galvanized surface is scratched or chipped, the surrounding zinc actually "heals the wound" and continues to seal out all corrosive elements! Nothing but hot-dipped galvanizing does this.

PERMANENT DURABILITY: Galvanizing means permanent protection and attractive appearance that cannot be matched by any other type of coating. With ROHN Products, you receive the *very finest* available—anywhere. All Hot-Dipped Galvanizing is done in the ROHN Galvanizing Plant according to ROHN Rigid Controls for Highest Quality.



Shown here are the huge pickling vats at ROHN where towers and other ROHN Products are prepared for galvanizing. Modern, high capacity equipment, skilled, experienced operators and finest raw materials keep ROHN quality high.





ROHN tower sections after fabrication are completely immersed in the molten zinc where all welds, points of construction, inner parts, including the interior of the tubing itself — is heavily coated with zinc.

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61601

FORM NO. 76720

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ROHN® COMMUNICATION TOWERS

Described herein are brief details of ROHN Towers. While primarily used in all types of communications, they also find uses in an amazing array of purposes. In fact, it literally can be said that today there is a ROHN Tower for every need. Hundreds of thousands of ROHN installations that further have withstood the greatest test of all . . . the test of time! For over a quarter century ROHN has been supplying towers of all kinds for microwave, AM-FM-TV, radar, VHF and mobile radio, military purposes, airports, high-level lighting, meteorological, instrumentation and ecology needs . . . and a host of others that serve dependably as no other tower.

TOWER No. 25 TOWER No. 45

DESIGN

This tower utilizes heavy duty 1¼" —16 gauge steel tubing for side rails in a 12½" equilateral triangular design with solid steel zig-zag cross pieces, entirely electric welded and fabricated by precision machines. Total of 8 zig-zag steps per 10 foot tower section.

ROHN No. 45 tower is designed in an 18 inch equilateral triangular pattern. The three legs of the tower are of heavy, 14 gauge, special quality steel. The cross bracing is the ROHN "zig-zag" design using a continuous solid steel rod which is electric welded to side rails every 15¾ inches. All sections are 10 feet in length.

CONSTRUCTION

This tower is constructed so as to be capable of being installed at guyed heights up to 200 feet.

The entire tower is accurately constructed, utilizing precision machines and then electric welded throughout. Workmanship and materials are of the highest quality available and fully conforming to specifications.

FINISH

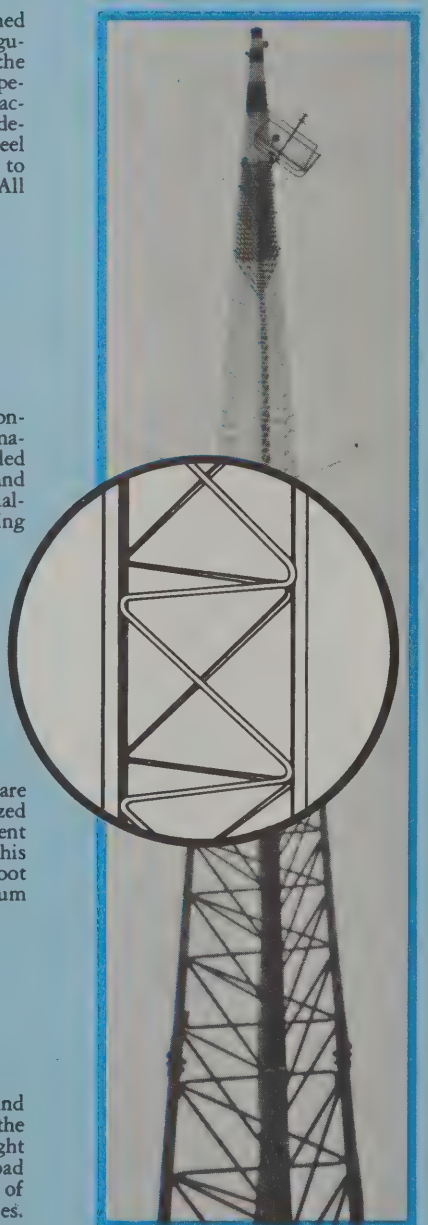
This tower is ROHN hot-dipped galvanized after fabrication and this coating completely covers the inside and outside of tower surface with a minimum of 2 ounces of zinc per square foot.

ROHN No. 45 tower sections are completely hot-dipped galvanized after fabrication to give permanent protection against corrosion. This completely covers every square foot of tower surface with a minimum of 2 ounces of zinc.

RATING

This tower has a rating as follows: At 200 feet it will withstand a 30 lb. per square foot wind-load (equivalent to 86.6 MPH true wind velocity) when guyed and installed according to specifications. This includes an antenna with an area of 6 square feet plus 2 transmission lines.

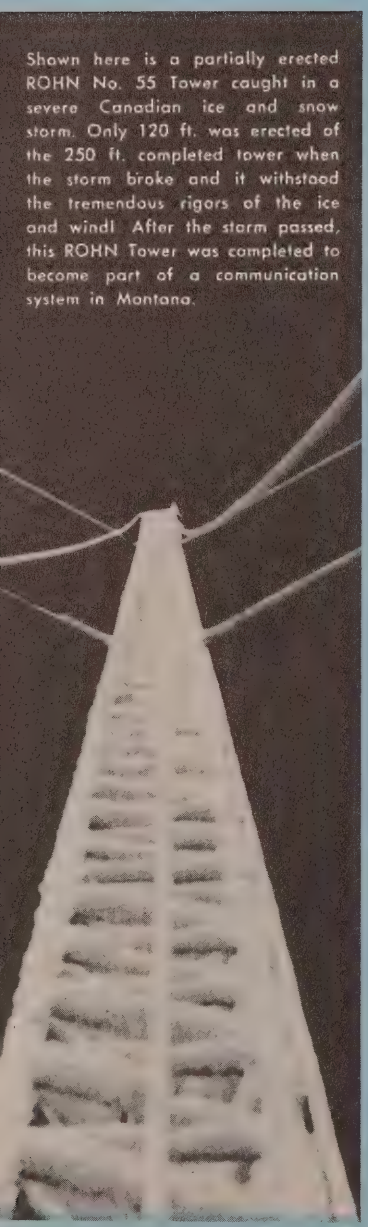
In a 30 lb. per square foot wind load (86.6 MPH true wind) the tower can be installed to a height of 300 feet with an antenna load equivalent of 8 square feet of surface plus 2 transmission lines.



Illustrated here is a No. 45 tower installed to a height of 300 feet.

ROHN® TOWERS

TOWER No. 55 RIGID TUBE D-C-J SERIES



Shown here is a partially erected ROHN No. 55 Tower caught in a severe Canadian ice and snow storm. Only 120 ft. was erected of the 250 ft. completed tower when the storm broke and it withstood the tremendous rigors of the ice and wind! After the storm passed, this ROHN Tower was completed to become part of a communication system in Montana.

DESIGN

The ROHN No. 55 Tower lends itself to a wide variety of uses where greater height is needed and/or antenna load requires a more rugged tower. Sleeves are used in joining tower sections together for greater strength.

Called "the straightest towers ever built", the ROHN Rigid-Tube Towers feature all bolted construction . . . available knocked-down for economy and ease in shipping. Knock-down feature cuts cube up to 500%.

CONSTRUCTION

Constructed on an 18½ inch equilateral triangle pattern, utilizing 1½ inch x ⅛ inch high quality steel side rails. Each section is 10 feet in length. Cross bracing is formed by a continuous 7/16 inch solid rod fashioned into a zig-zag shape, joining side rails every 15¾ inch, electrically welded throughout.

This series offer towers of 18" (J Series), 24" (C Series) or 36" (D Series) triangular configuration with varying size steel legs of from 10 to 14 gauge, from 1½" to 3" O.D. and from 20 ft. to 10 ft. sections respectively.

FINISH

All tower sections completely hot-dipped galvanized after fabrication to permanently protect all points of welding and construction against corrosion—and add enduring beauty to the tower. A minimum of 2 ounces of zinc per square foot of surface is used.

C & D Series Towers come in hot dip galvanized finish after fabrication according to ASTM specification A-123 which gives a minimum of 2 oz. of zinc per square foot of surface. Hardware meets ASTM specification A-153.

RATING

When properly guyed at 400 feet this is a 30 lb. per square foot tower, able to hold 10 square feet of antenna plus 2 transmission lines.

D Series suitable for nominal installation to 440 ft. or up to 600 ft. depending on wind load and antenna loading (check Engineering Department recommendations). C Series rated to 400 feet and J Series to 300 feet.

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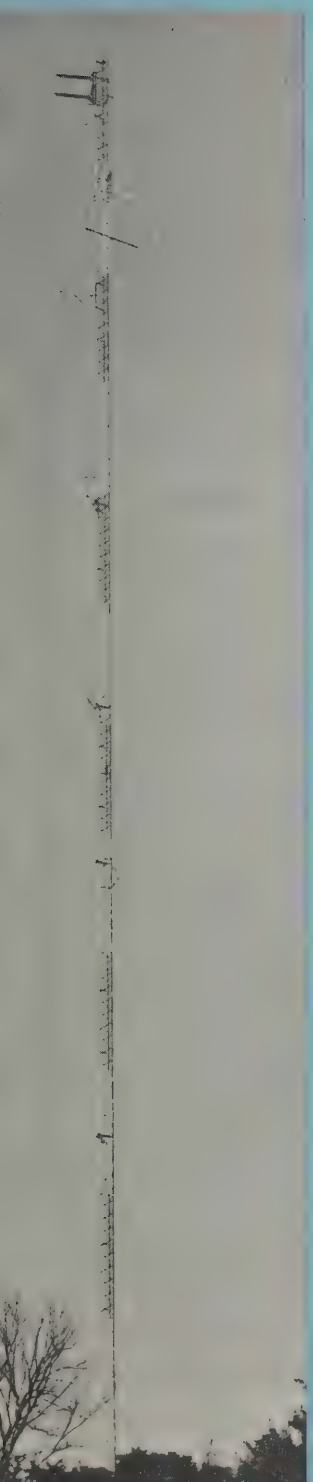
ROHN® TOWERS

TOWER No. 80 TOWER No. 90



DESIGN

This tower is designed specifically for microwave installations and heavy duty communication and broadcast uses.

The Model 90 Tower is designed specifically for heavy microwave loads and TV broadcast where large top mounted UHF or VHF transmitting antennas are required. However, the ROHN Model 90 Tower can be used for other communications and meteorological applications of tall heights or where inside climbing facilities are required.

CONSTRUCTION

The No. 80 tower is constructed in an equilateral triangular pattern with steel legs and cross-bracing in a pattern as indicated by the insert. The triangular size is 41" on leg centers and the diameter and weight of the tower legs varies to meet the requirements of the installation. *This feature permits considerable flexibility in supplying a tower tailored to specifically meet and adequately handle the antenna to be installed.* Cross-bracing is of tubular steel with bolted construction.

The ROHN Model 90 is constructed of an equilateral triangle pattern, 5 ft. on leg centers. All bolted steel construction, of variable size tubular legs and angle braces, provide a wide range of design conditions.

FINISH

All components of this tower are completely hot-dipped galvanized *after fabrication* to protect all areas of the tower. A minimum of 2 ounces of zinc per square feet of surface is applied throughout including bolts.

All components of these towers are completely hot dip galvanized after fabrication to protect all areas of the tower, including both inside and out of tower legs. A minimum of 2 ounces of zinc per square foot of surface is applied throughout, including bolts and nuts.

RATING

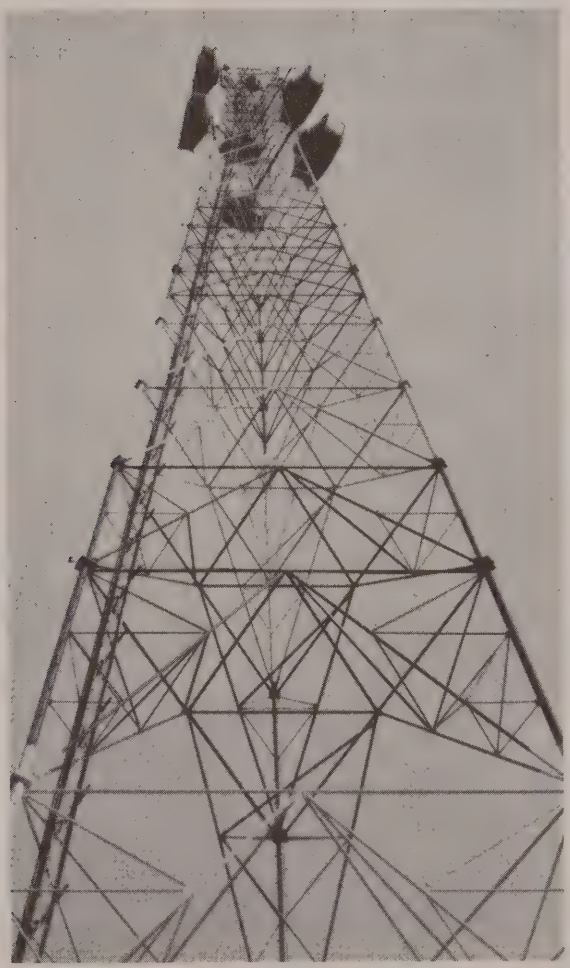
This tower is rated for installation to maximum height of 800 feet using variable size and weight of tubular steel components. Each tower is engineered to handle a particular job as far as antenna and loading requirements.

The ROHN Model 90 Tower is rated for heights up to and exceeding 800′ depending on local conditions.

ROHN NO. 90 TOWER installed to 800 ft. for CATV, FM and TV.

ROHN® COMMUNICATION TOWERS

SSV SELF-SUPPORTING TOWER



Here is a superbly designed, unique tower series that fills a wide range of needs because of their extraordinary versatility! Widely used for all types of communication, broadcasting, microwave and industrial needs, the ROHN SSV series has many outstanding features to make it worthy of consideration for your requirements.

Outstanding Features of the ROHN® "SSV" Series Towers . . .

- Designed for a minimum wind load of 30 psf. Towers requiring higher wind or ice loads are no problem due to the tower's amazing versatility.
- Standard designs available in heights to 500 feet depending on loading. Special towers available depending on specific requirements.
- The SSV series make use of primarily knock-down construction for on-site assembly, which reduces shipping costs.
- Towers for minimal loadings are available in welded construction in heights up to 60 feet, shipped in 20 foot sections.
- All components and hardware are Hot Dip Galvanized **after** fabrication with a zinc coating per E.I.A. Standards.
- All ROHN SSV series towers are engineered, designed and fabricated to meet or exceed latest E.I.A. specifications.

Unarco-Rohn
Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel and remarked with hazard and warning labels at least twice a year to insure safety and proper performance.

All antenna installations must be grounded per local or national codes.

FORM NO. 76832
PRINTED IN U.S.A.

UNARCO-ROHN

TERMS AND CONDITIONS RELATING TO ALL SALES

1. All quotations, proposals, prices, or other terms are made for acceptance within 60 days (after 60 days, prices in effect at time of shipment will apply) and shipment within 60 days of purchase order date, unless otherwise stated. They are subject to change without notice; however, we invite your request for an extension. Also, they are subject to Credit and Marketing Department approval prior to acceptance.

2. Every effort will be made to maintain shipping schedules. All deliveries and schedules are contingent on availability of raw materials, fuel, and transportation. We will not be liable for damages on account of any delays due to causes beyond our reasonable control. Rohn reserves the right to make partial shipments and to submit invoices accordingly.

3. Changes or modifications to orders can be made only by written agreement executed by all parties affected thereby, which agreement shall include any price modification.

4. Rohn's responsibility ceases upon delivery of all shipments to the carrier. The unloading of all shipments is the responsibility of the customer, not the carrier or Rohn. Buyer is warned against receipting for merchandise until careful inspection has been made. Buyer must make all claims and report all damages and losses to the delivering transportation company. All merchandise leaving Rohn's factory has been carefully inspected and Rohn does not assume responsibility for damages or shortages which occur in transit.

5. No federal, state, or local engineering costs or taxes are included in quoted prices. All quotations, proposals, prices, or other terms are subject to increase without notification by the amount of any sales, excise, or other tax levied or charged by any governmental agency and are subject to price adjustment in the amount expended by Rohn in compliance with any governmental action.

6. Orders are not subject to cancellation by buyer except by written agreement with seller. Any other cancelled, after any work has been done by Rohn, such as engineering, production, etc., will have a cancellation charge, to be determined solely at the discretion of Rohn for whatever work has been performed with a minimum of 10% of the purchase order price. If customer so chooses, he shall have the right to receive the material already performed at time of cancellation at the quoted price.

7. Material received may not be returned by buyer except by written agreement with seller. In all cases, permission must be secured from Rohn prior to the returning of any goods for credit. All returned goods are subject to a minimum service charge of 20%, plus all transportation charges, and are subject to inspection by Rohn. Rohn reserves the sole right to determine amount of credit to be issued on all goods returned for credit. Only standard, currently manufactured Rohn products may be considered for return and credit.

8. Rohn warrants the commercial items of its manufacture only, to be reasonably fit for the purpose for which they are manufactured and sold, provided, however, that this warranty shall be effective only if purchaser installs all material according to Rohn's recommendations and specifications and that purchaser during the warranty period shall regularly, not less than semi-annually, inspect and properly maintain all items and forward copies of inspection and maintenance reports to Rohn. Any item found unfit for its purpose within 12 months from date of delivery will be repaired or replaced free of charge, F.O.B. Rohn's plant. Rohn shall be immediately notified in writing of such unfitness.

   Rohn reserves the sole right to determine if any material is to be repaired or replaced free of charge or to be supplied at Rohn's standard prices. Such obligation shall be limited to parts returned for inspection, properly packed and expenses prepaid, and providing inspection shall satisfactorily indicate defects.

   The warranty herein made is in lieu of all other warranties and, except as expressly stated herein, Rohn does not make and there are no warranties or obligations of any kind or nature whatsoever either expressed or implied including, but not restricted to, warranty or obligations as to design, material, workmanship, or manufacture or as to the use of the items covered hereby. Rohn shall not under any circumstances be liable to third persons for any claims or damages including direct, special, indirect, or consequential damages for any reason. The buyer agrees that it will hold and save Rohn harmless from any such claims or damages and shall indemnify Rohn for any expense, loss, or damage in connection therewith.

   The above Warranty applies only to items manufactured by Rohn. Items not manufactured by Rohn are warranted and guaranteed only to the extent and in the manner warranted and guaranteed to Rohn by the manufacturer of such items and then only to the extent Rohn is liable to enforce such warranty or guaranty.

   Rohn will assume no responsibility for the adequacy of a tower if material is used which is not totally supplied by Rohn.

   Obstruction lighting equipment carries no warranty or guaranty of any kind.

   The above sets forth the only warranty made by Rohn in connection with items manufactured or sold by it, and any provisions in any proposals, specifications, advertising, or other provisions hereof, are merely descriptive and are not to be construed as warranties made by Rohn.

9. Rohn reserves the right to change or modify the design and construction of any product manufactured by Rohn and to substitute material equal to or superior to that originally specified.

10. No proposal, order, quotation, or acceptance may be changed or varied by verbal agreement, and all orders are accepted only under the provisions set forth herein.

11. Purchase orders and requests for quotations must be submitted in writing to Rohn.

12. If outside source inspection is required prior to shipment of an order, $25.00 per hour is chargeable, with $50.00 as a minimum.

13. Any welding inspection required by customer or customer's specifications must be done at Rohn's plant prior to packing and shipment of material from Rohn's plant.

14. A minimum charge of $25.00 will be billed for special handling and preparation of material for air shipments.

15. No credits will be issued for any reason against a purchase order whose billing is more than 90 days old. Customer corrections or complaints must be made within this period of time.

16. Standard catalog tower prices do not include special drawings or stress analyses. If any is required, there will be a charge.

17. Rohn at all times reserves the right to take pictures of any or all of its products after installation for advertising purposes, except those which are under classified governmental control.

18. On any request made to ship merchandise prepaid and to bill freight to the customer on products which are sold F.O.B. Rohn's plant, a charge of $15.00 will be billed to the customer for this service. The customer will be responsible for any extra charges incurred on prepaid shipments. Any F.O.B. Peoria item shipped from Reno, Dallas, Birmingham, Frankfort, or Bridgeport will incur a 10% inbound freight and handling charge and will be shipped F.O.B. shipping point.

19. A finance charge not to exceed 1½% per month or maximum allowable per State law will be billed on all accounts not paid within 30 days of invoice date.

20. Minimum total net worth of merchandise which can be ordered is $20.00. Any orders placed for less will be billed at $20.00.

21. Any purchase order ready for shipment, which is placed under a "hold order" by the customer for any reason, will be subject to a 1% per month storage charge, plus a 1½% per month interest charge for a total of 2½% per month, from the date of the hold until the shipment is released.

22. All instructions, notices, etc. in Rohn's standard commercial catalog at date of purchase are a part of these terms and conditions.

23. All CIA requirements must be met with certified checks or money orders to insure prompt shipment.

030178

H E L P

Your help is needed to keep prices down.

Please send all orders and inquiries via MAIL or TWX (written). Verbal orders and questions take extra time, increase phone expense, and cause misunderstandings and mistakes.

Your help and cooperation is appreciated and will keep future prices down.

Unarco-Rohn
Division of Unarco Industries, Inc.

P. O. Box 6537
Birmingham, AL 35217

P. O. Box 609
Frankfort, IN 46041

P. O. Box 2000
Peoria, IL 61656

TWX #910-652-0646

P.S. No orders or inquiries are processed until written confirmation is received.

Form No. 77958

HOT DIP GALVANIZED

ROHN® NO. 25G TOWER

GENERAL USE

General Purpose Communication or Heavy-Duty TV Tower. The 25G will satisfy a tremendously wide range of tower needs.

DESIGN

Built on a 12½" equilateral triangular design with continuous steel "zig-zag" cross-bracing entirely electric welded and fabricated in precision equipment. The 8 "zig-zag" braces per 10' section mean more than usual strength.

CONSTRUCTION

Unequalled Sturdiness . . . Extra heavy-duty 1¼" steel tubing is used for side rails, resulting in far greater strength and sturdiness than ordinarily found in this size tower. SUPERIOR STRENGTH . . . has always been foremost in ROHN towers. This is achieved by setting rigid high standards for the steel used. These standards are constantly maintained by scientific testing according to accepted laboratory procedures so quality never varies! It's a natural conclusion that when quality ingredients are combined with precision manufacturing and proven design the result is a higher quality product!

FINISH

Famous ROHN Hot-Dip Galvanized long-life finish . . . the most durable coating ever known. Rust-proofs and gives an always attractive appearance. *Every inch,* including *inside* of entire tower, evenly and completely covered with zinc *after* fabrication.

ENGINEERING DATA

ROHN superior engineering means advanced design . . . this results in the best tower for the needs of today! This is proven because here is a tower at least 33% stronger and more durable than similar size and type towers found on the market today. At the same time, the ROHN production system means lower costs . . . giving you a tower actually costing less than inferior towers. Get the best . . . look at the No. 25G carefully and you'll agree.

SPECIAL FEATURES

The No. 25G uses double-bolted joints . . . proven the best method of joining tower sections for sturdiness and dependability. The extra strength of the No. 25G allows it to be self-supporting provided a house bracket is used and can go 35 feet above this bracket under normal conditions. (see instruction sheet) Under most guyed conditions the No. 25G is suitable to heights of 200 feet! Where special conditions or unusual antenna loading requirements must be met, we suggest you contact the Engineering Department for complete information. *Assembly bolts and nuts are located within 1 leg of each tower section.*

SELF-SUPPORTING HEIGHTS FOR 25G TOWER*

WIND LOAD	Factor of Safety—1.5		Factor of Safety—2.3	
	No. Ant.	2 Ft²	No. Ant.	2 Ft²
10.0 PSF (50 MPH)	72.4'	64.8'	58.4'	50.9'
14.4 PSF (60 MPH)	60.4'	52.9'	48.7'	41.3'
20.0 PSF (70.7 MPH)	51.3'	43.8'	41.4'	34.1'**

***See Installation Instruction** ****Recommended**

NOTE: Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

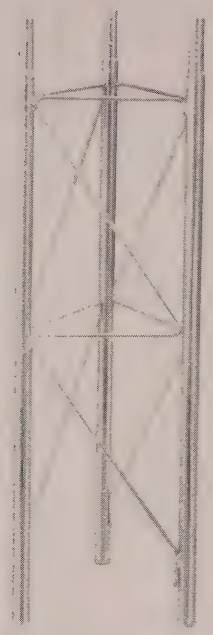
Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

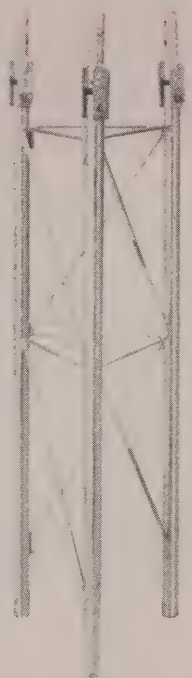
All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

All antenna installations must be grounded per local or national codes.

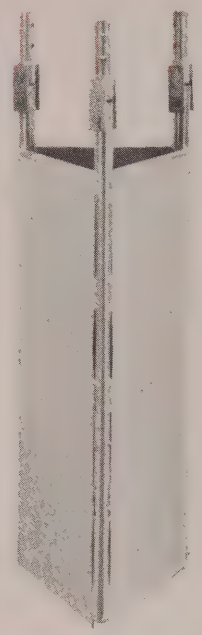
ROHN® NO. 25G TOWER ACCESSORIES



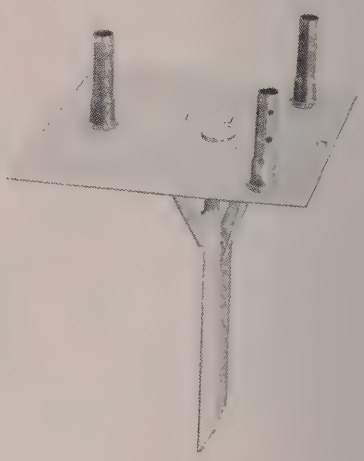
SB25G
3'4" SHORT BASE
section for concrete



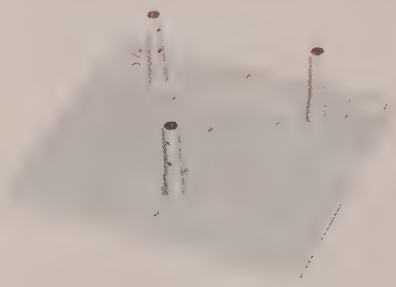
SBH25G*
3'4" HINGED SHORT BASE
section for concrete



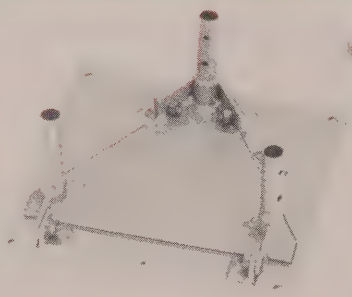
HGB25G*
3' HINGED GROUND BASE
(use without concrete)



SDB25G*
SINGLE DRIVE-IN BASE

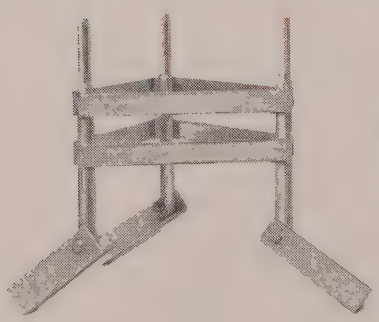


BPC25G*
CONCRETE BASE PLATE



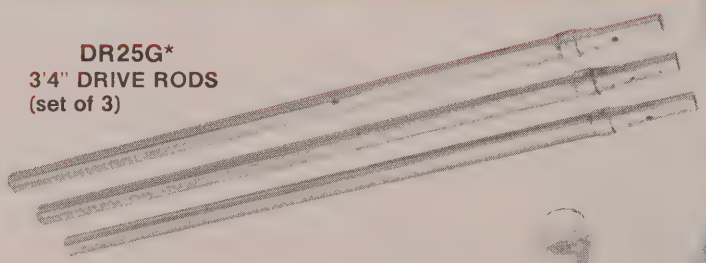
BPH25G*
HINGED BASE PLATE for concrete

FR25G*
FLAT ROOF MOUNT

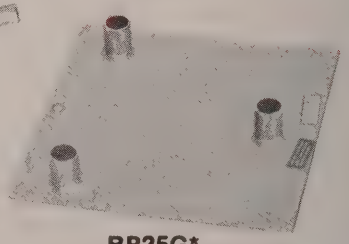


PR25G*
PEAK ROOF MOUNT

DR25G*
3'4" DRIVE RODS
(set of 3)



DT25
DRIVE TOOL for DR25G



BP25G*
BASE PLATE (for use with drive rods)

Note: Towers mounted on these bases must be bracketed or guyed.

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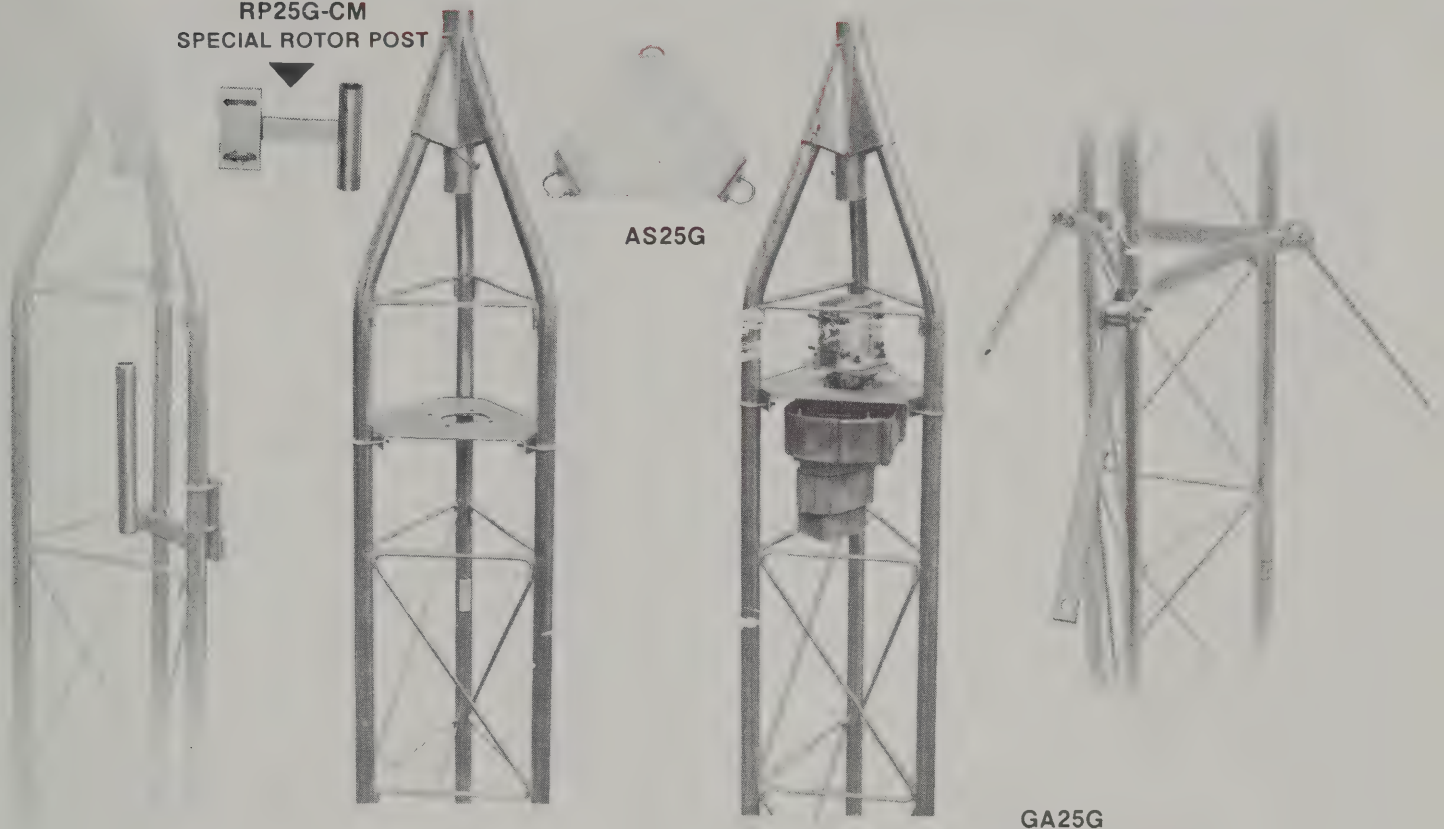
ROHN® NO. 25G TOWER ACCESSORIES

RP25G-CM
SPECIAL ROTOR POST



AS25G

RP25G
ROTOR POST

AS25G ACCESSORY SHELF
(for mounting Ham-M rotor.)

AS25G on 25AG Top Section
with Hy Gain Model 400 Rotor
(must be redrilled.)

GA25G
GUY ASSEMBLY with torque bars

GB25G GUY BRACKET ONLY
without torque bars

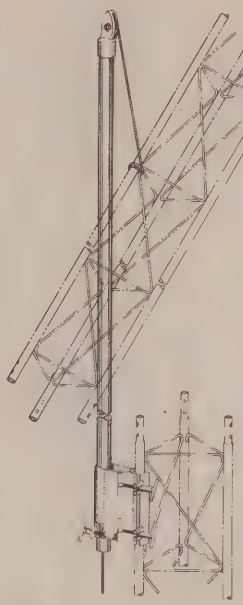
HB25AG 0-15"
HB25BG 0-24" (not shown)
HB25CG 0-36" (not shown)
ADJUSTABLE HOUSE BRACKET

EB2515G 15"
EB2524G 24" (not shown)
EAVE BRACKET

EB2525G UNIVERSAL EAVE BRACKET

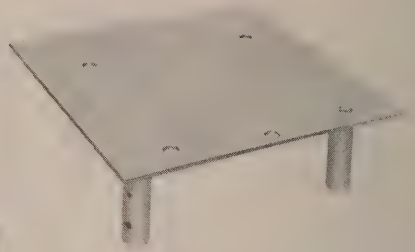
ROHN® NO. 25G TOWER ACCESSORIES

TA25
25TDM-2
TORQUE ARM STABILIZER ASSEMBLY and TOP DISH MOUNT, (see drawing Page C-760786 for various sizes and assembly)



EF-25-45
ERECTION FIXTURE

25ACL
ANTI-CLIMB SECTION

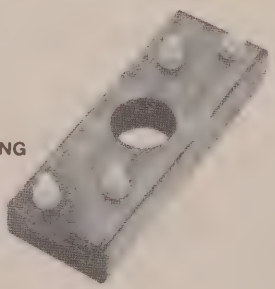


APL25G
TOP BEACON PLATE

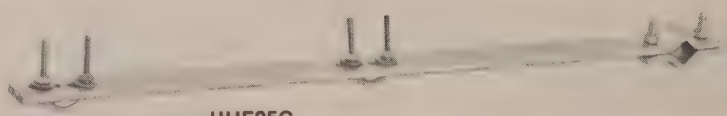
SAB25G-2
SIDE ARM BRACKET

TB50 1¼" ID, 2" OD
TB75 (not shown)
1½" ID, 2" OD

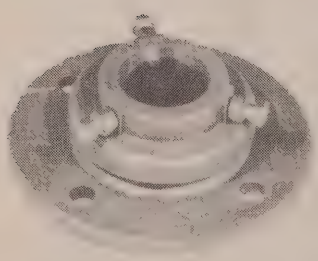
TOWER BUSHING
for use in 20AG or 25AG Top Section



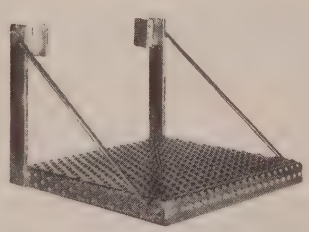
AB
HARDWOOD BEARING
for use on 25AG-4, Top Section
for 2" OD tubing



UHF25G
SIDE ARM MOUNT
for UHF & FM antennas



TB-3 HEAVY DUTY THRUST BEARING



WP25G
WORK PLATFORM

DM25G-2
FACE DISH MOUNT
for 4 foot grid dish maximum

SA25G-224
SA25G-524 (not shown)
24" SIDE ARM

SA25G-67
67" SIDE ARM
(not illustrated)

TB-2
THRUST BEARING

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

FORM No. 76824

PRINTED IN U.S.A.

#25 TOWER

PART NUMBER		WT.
25G	10' tower section	40
25AG	9' top section for use as home TV top section	31
ST25AG	5' short top section for use as home TV top section	18
25AG1	Top section for use with communication antenna. Mast support tube is 1¼" galv. pipe, threaded on top and projecting 12" above apex of side rails.	31
25AG2	Top section for use with communication antenna. Mast support tube is 2¼" O.D. tubing, 36" total length, extending 18" above apex of side rails.	31
25AG3	Top section for use with communication antenna. Mast support tube is 2¼" O.D. tubing, extending 12" above apex of side rails. A 2" O.D. antenna stub will fit snugly inside support tube.	31
25AG4	8' top section for use with communication antenna. Upper end terminates in 11" dia. flat, circular plate with 2¼" dia. hole in center.	31
25AG5	Top section for use with communication antenna. Mast support tube is 2-3/4" O.D. and 2-9/16" I.D. tubing, 18" total length.	31
25TG	10' tapered base section	60
*25RG	10' insulator section for 25G tower (includes three #10470 post insulators)	74
25ACL	10' anti-climb section (for #25 and #20 towers)	115
25ACL3	3 anti-climb metal sheets for attaching to tower section	65
25JBK	Joint bolt kit	½
APL25G	Beacon plate	14
SB25G	3'4" short base section for concrete	10
SB25G5	5' short base section for concrete	20
*SBH25G	3'4" hinged short base section for concrete	14
*HGB25G	3' hinged ground base (for use without concrete)	27
*SDB25G	Single drive base	20
*BPC25G	Concrete base plate	27
3/4X12PP	Pier pin (for BPC25G or 25TG - one required)	1
*BPH25G	Hinged base plate for concrete	21
1/2X12BB	Concrete base bolt with double nuts (for BPH25G - four required)	½
*FR25G	Flat roof mount	24
*PR25G	Peak roof mount	14
*BP25G	Base plate (for use with drive rods)	7
*DR25G	3'4" drive rods (set of 3)	8
DT25	Drive tool	1
RP25G	Rotor post	3
RP25GCM	Rotor post	2
AS25G	Accessory shelf. Triangular plate for mounting Ham "M" rotor or mast bearing. Mounts inside of tower. When using Model 400 Rotor, plate must be redrilled.	4
GA25G	Guy assembly (bracket with torque bars)	10
GB25G	Guy bracket only	6
HB25AG	Adjustable house bracket (0 to 15")	8
HB25BG	Adjustable house bracket (0 to 24")	11
HB25CG	Adjustable house bracket (0 to 36")	17
EB2515G	Eave bracket (15")	4
EB2524G	Eave bracket (24")	6
EB2525G	Eave bracket (universal)	7
TB50	Tower bushing for 25AG and ST25AG tops (1¼" I.D. x 2" O.D.)	½
TB75	Tower bushing for 25AG and ST25AG tops (1½" I.D. x 2" O.D.)	½
AB	Amateur bearing for use with 25AG4 top (2" x 4" x 10" hardware)	1
TB2 (Discontinued)	Thrust bearing, ball bearing, self-aligning, for 2" O.D. tubing, bolts to 25AG4 top	8
TB3	Heavy duty thrust bearing, recommended for 2" O.D. tubing	2½
BPL25G	Top plate with guy lugs for mounting AB, TB2, or TB3 bearing	7
UHF25G	Side arm mount for UHF and FM antennas	4
SAB25G2	Side arm bracket for top antenna mounting alongside beacon (2½" O.D. tubing, 36" total length)	15
SA25G224	24" side arm with 36", 2¼" O.D. support tube	22
SA25G524	24" side arm with 18", 2-9/16" I.D. support tube	18
SA25G67	67" side arm, 1¼" I.D. support tube, for mounting TV receiving antenna (not recommended and must be guyed to resist twist)	25
TA25	Torque arm stabilizer assembly	35
25TDM2	Top dish mount w/2" O.D. mast (extends 2' above top plate)	34
25TDM2SP	Top dish mount w/2" standard pipe (extends 3' above top plate)	44
25TDM2EH	Top dish mount w/2" EH pipe (extends 3' above top plate)	53
25TDM25SP	Top dish mount w/2½" standard pipe (extends 3' above top plate)	58
DM25G2	Face dish mount w/2" (2-3/8" O.D.) 5' long standard pipe	42
WP25G	Work platform (for #25 and #20 towers)	10
SR245	Safety ring	8
EF2545	Aluminum erection fixture, 12' long (fits all models with 1¼" side rails)	18
P2545	Pole only for EF2545	10
H2545	Head only for EF2545	8

*Towers mounted on these bases must be bracketed or guyed.

The #20 tower is not recommended for commercial, ham, CB or guyed installations.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS - or - BIRMINGHAM, ALABAMA. SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

October 1, 1977

REFERENCE SHEET AND INSTALLATION INFORMATION

#25 BRACKETED TOWERS, NON-GUYED

INSTALLATION: Select a tower location sufficiently clear and out of falling distance of power lines since every electrical and telephone wire should be considered dangerous. Tower should be installed by experienced and trained personnel. All antenna installations must be grounded per local or national codes.

BASE: The size of the concrete base for a 50' #25 tower, with a house bracket 12' aboveground, is 3' deep by 18" square. For cases of loose soil, etc., the base must be larger. Spread about 2" of gravel in bottom of hole prior to setting base assembly. The base assembly should be attached to the first 10' section prior to setting into gravel. After setting base assembly on gravel, fill another 3" with gravel around legs of base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. The base assembly and first 10' section should be leveled, plumbed, and temporarily guyed or braced while pouring the concrete. This will insure a plumb tower after installation. Check tower to assure it is plumb and level after pouring concrete. Do not pull base up into the concrete to level it and do not drive it hard into ground as this plugs leg holes and prevents moisture drainage. Crown the top of the concrete slightly to prevent water accumulation. Do not use drive rods as a base for tower when set in concrete.

HEIGHT OF TOWER & BRACKET USES: House brackets must be used and must be mounted at least 12' aboveground to be effective. The #25 tower should not extend more than 33' above a house bracket. (Note: Two house brackets are to be used, equally spaced, on the 80' tower.) To secure the house bracket, use lag screws no smaller than 3/8" x 2". A special effort should be made to locate the house bracket such that the lag screws go through the siding into a stud. Brackets fastened to the siding only will not hold in a high wind. Tighten the house bracket U-bolts only enough to prevent looseness. Do not dent or flatten the tower upright members by excessively tightening U-bolts.

BOLTS: Nuts and bolts are located in tower leg. Installers are urged to use a 10" lining-up punch that tapers from about 1/2" to 5/32" diameter over a 6-1/2" length. If bolts cannot be pushed through the holes with the heel of the hand while rocking the tower, do not hammer them through. Carefully drive the punch into the hole just enough to slightly enlarge it. The leg bolt hole should be just large enough to admit the bolt. Never drill out the holes. Be sure to tighten all leg bolts until they partially flatten the sleeves, causing the sleeves to actually grip the legs inside. Always replace stripped bolts. Upon completing an installation, there should be no vertical movement between tower sections at the joints when the tower is deliberately swayed from side to side.

MISCELLANEOUS: Installation is greatly hastened and simplified by the use of an erection fixture. Anti-climb sections are recommended for all towers to prevent unauthorized persons from climbing tower.

CAUTION ... Be sure hinge bolts on hinged type accessories are loosened before attempting to hinge tower over. Hinge up no more than 33' of #25 tower only. All hinged type bases are recommended to be used to raise tower only without antenna. When raising and lowering tower on any type of hinge base or hinge section, the loads applied for hinging the tower must be applied equally on both sides of tower in order to reduce the possibility of twist on tower and hinges at the base. Special care must be taken to avoid the use of raising and lowering methods which may cause damage to tower or hinges.

All information is based upon antennas with not more than 2 square feet of area in a 20 psf (70 mph) wind load and a safety factor, with antenna installed at tower apex.

See Chart B-691119 for more information on non-guyed towers.

NOTE: All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.

PART NUMBER	
25G-030-BRKT	30' Complete Bracketed Tower
25G-040-BRKT	40' Complete Bracketed Tower
25G-050-BRKT	50' Complete Bracketed Tower
25G-060-BRKT	60' Complete Bracketed Tower
25G-070-BRKT	70' Complete Bracketed Tower
25G-080-BRKT	80' Complete Bracketed Tower

Refer to alphabetical/numerical price list for reference sheet prices on Complete #25G Bracketed Towers.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

New! ROHN® SAFETY RING

This man is working safely! Thanks to his use of ROHN Safety Ring and Work Platform.

New, one-piece Safety Ring is now added to the line of ROHN safety equipment for use with ROHN NO. 25, 45, and 55 towers. Unit is the ultimate of simplicity in that it snaps around tower legs and locks completely and securely into place . . . . . all without use of pins, bolts, or adjustments of any kind. Can be moved up and down entire tower as required. Hot Dip Galvanized, fully maintenance free, and built to last. Comfortable 25" diameter securely holds and retains worker in secure position and permits efficient working. More than one Safety Ring can be used in combination to support legs, waist, and shoulders should working conditions so require. Your best and most economical answer to safety is the Rohn Safety Ring.

Safety Ring and Work Platform in Action

Use Safety Ring with the ROHN Work Platform as the *perfect* combination. If Work Platform is already used, add the Safety Ring for complete worker safety and efficiency as illustrated.

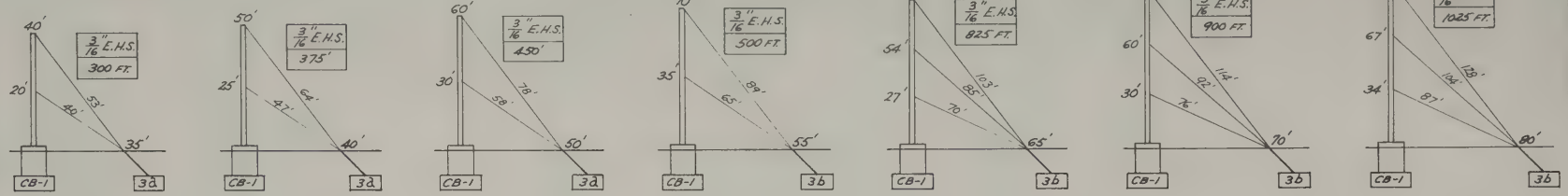
Order Part No.	***WEIGHT:***
SR-245 Safety Ring for Rohn No. 25 or 45 Tower	8 lbs.
SR- 55 Safety Ring for Rohn No. 55 Tower	10 lbs.

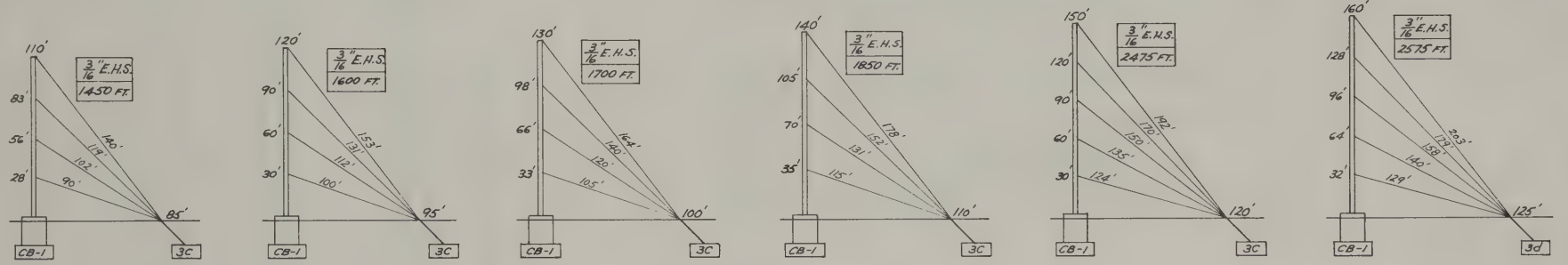
Close-Up Shows Details

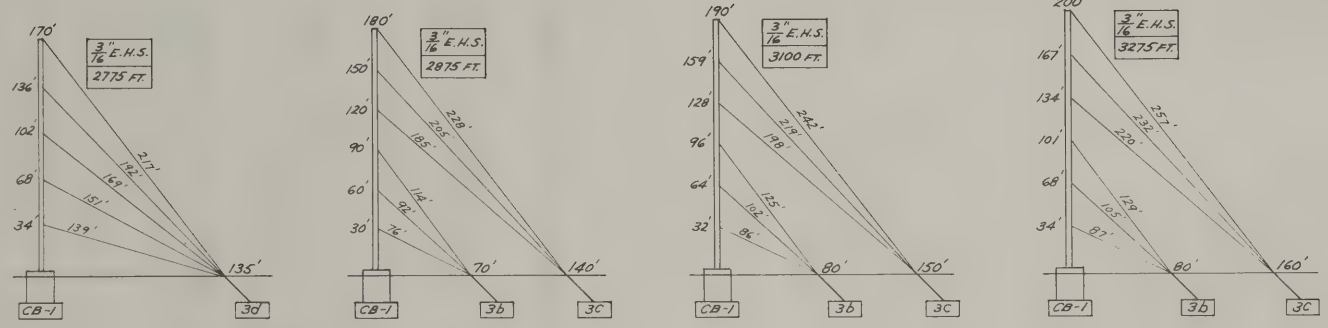
Unarco-Rohn
Division of Unarco Industries, Inc.
P.O. Box 2000, Peoria, Illinois 61601

FORM NO. 75606 PRINTED IN U.S.A.

C-640603-R1

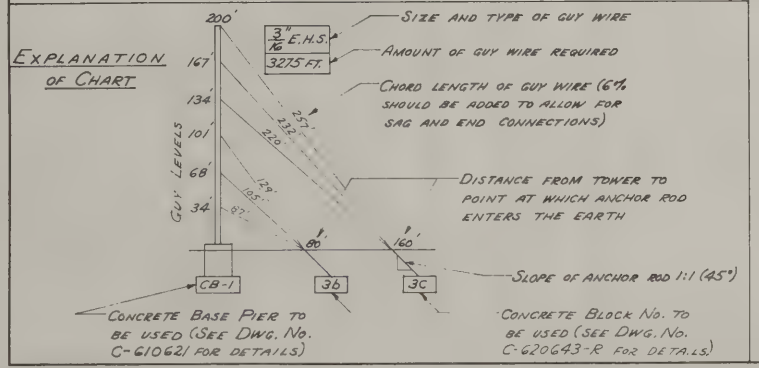


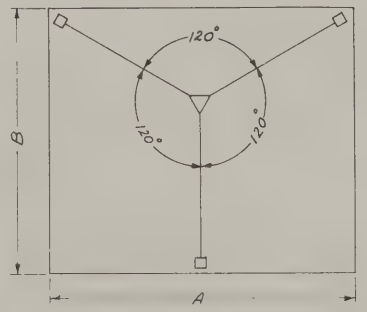




NOTES:
1) ALL GUY DIMENSIONS ASSUME LEVEL GROUND.
2) ALLOWABLE LOAD AT APEX OF TALLEST TOWER IS 180 LBS. LATERAL THRUST. (EQUIVALENT AREA IS 6 SQ.FT.) DESIGN ASSUMES USE OF ONE 7/8" LINE AND ONE 1/2" LINE.
3) GUYS SHOULD BE TENSIONED TO APPROXIMATELY 10% OF THEIR ULTIMATE STRENGTH.
4) ALL TOWERS ARE DESIGNED ACCORDING TO E.I.A. SPECIFICATIONS.

EXPLANATION OF CHART





FOR SPACE REQUIREMENT REFER TO DWG. No. C-640531

NO	DESCRIPTION	DATE	BY
1	H.S. GUY WIRE TO E.H.S. GUY WIRE	8-21-71	A.E.D.

REVISIONS

DRAWN AED		TITLE
CHECKED ck	WIND LOAD = 30 PSF (86.6 MPH)	GUYING DETAILS FOR MODEL 25 TOWER
APPROVED [illegible]	ROHN MANUFACTURING PEORIA, ILLINOIS	DRAWING NO.
DATE 6-23-64		C-640603-R1
SCALE NONE		

ILLINOIS B-P 1000-H

PARTS LIST P-289
(Replaces P-253)

November 1, 1977

PARTS LIST #25G GUYED TOWER

30 lbs./sq. ft. Wind Load

6 sq. ft. of Allowable Load

Tower Height	25G	25AG2	BPC25G with 3/4"x12" PP	APL25G and SAB25G2	GA25G		G.W. 3/16" E.H.S.	C.C.M. 3/16"	Th. 1/4"	T.B. 3/8"x6" E&E	GAC 253	GAC 255
40'	3	1	1		2		300'	36	12	6	3	
50'	4	1	1		2		375'	36	12	6	3	
60'	5	1	1		2		450'	36	12	6	3	
70'	6	1	1		2		500'	36	12	6	3	
80'	7	1	1		3		825'	54	18	9	3	
90'	8	1	1		3		900'	54	18	9	3	
100'	9	1	1		3		1100'	54	18	9	3	
110'	10	1	1		4		1500'	72	24	12		3
120'	11	1	1		4		1600'	72	24	12		3
130'	12	1	1		4		1700'	72	24	12		3
140'	13	1	1		4		1850'	72	24	12		3
150'	14	1	1		5		2500'	90	30	15		3
160'	16		1	1	5		2575'	90	30	15		3
170'	17		1	1	5		2775'	90	30	15		3
180'	18		1	1	6		2875'	108	36	18	6	
190'	19		1	1	6		3100'	108	36	18	6	
200'	20		1	1	6		3275'	108	36	18	6	

Items shown above are necessary for complete "ground" guyed tower.

For "roof" towers a flat roof mount (FR25G) is substituted for the concrete base plate (BPC25G) and wall anchors (GAWP25) are substituted for the concrete anchors (GAC25).

When ordering specify "roof" or "ground".

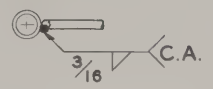
Anchor grounding (AGK) and base grounding (BGK) of all towers are recommended by EIA and Unarco-Rohn. However, grounding is not included in tower prices. See appropriate price list for grounding material.

All types of antenna installations should be thoroughly inspected by qualified personnel and remarked with hazard and warning labels at least twice a year to insure safety and proper performance.

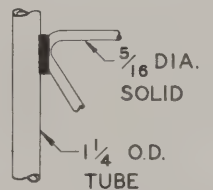
C-630625

TOWER SPECIFICATIONS

DISTANCE BETWEEN SIDE RAILS (CENTER TO CENTER)	11¼"
OVERALL LENGTH OF SECTION	10'-0"
WEIGHT PER SECTION	40 LBS.
SIDE RAIL DIAMETER AND GAUGE	1¼" O.D. 16GA.
CROSS SECTIONAL AREA - ONE LEG	.2420 SQ. IN.
GROSS ALLOWABLE VERTICAL LOAD ON THE BOTTOM TOWER SECTION	18,960 LBS.
MAXIMUM ALLOWABLE AXIAL COMPRESSION OF THE CROSS SECTION OF ONE SIDE RAIL	6,320 LBS.
MEASURED TENSILE STRENGTH OF ONE SIDE RAIL	16,120 LBS.
MEASURED TENSILE STRENGTH OF ONE BOLTED LEG JOINT	13,280 LBS.
MAXIMUM ALLOWABLE TENSION IN EACH BOLTED LEG JOINT	5,310 LBS.
SAFE MOMENT OF RESTRAINT	5,130 FT.-LBS.
L - UNBRACED LENGTH OF SIDE RAIL (DISTANCE BETWEEN CROSSPIECES)	15¾"
R - RADIUS OF GYRATION OF SIDE RAIL	.420"
L/R FOR MAIN LEG MEMBER	37.5
WIND LOAD PER LINEAL FOOT OF TOWER AT THE HORIZONTAL WIND PRESSURES (PER SQUARE FOOT OF FLAT SURFACE) LISTED BELOW:	
30 LBS	7.62
40 LBS	10.16
50 LBS	12.70

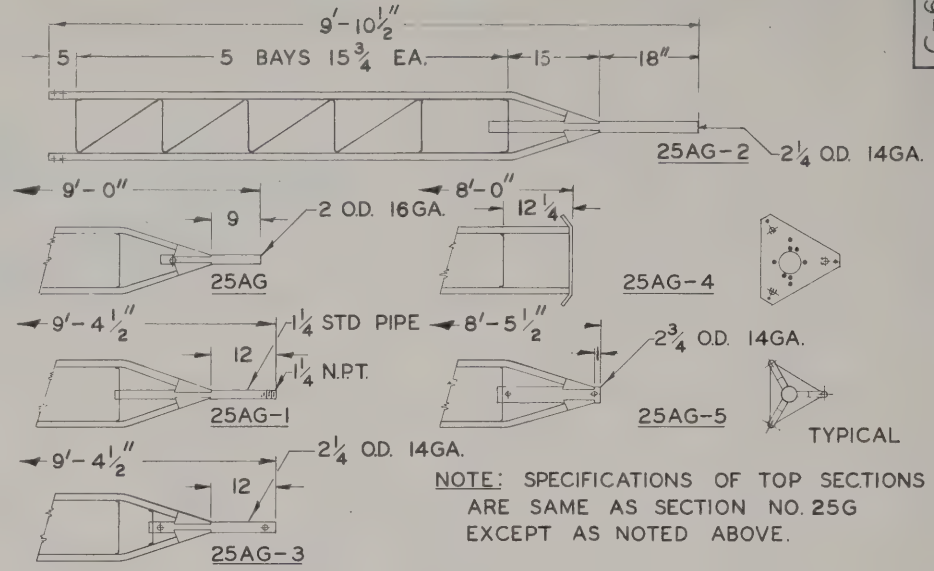


PLAN



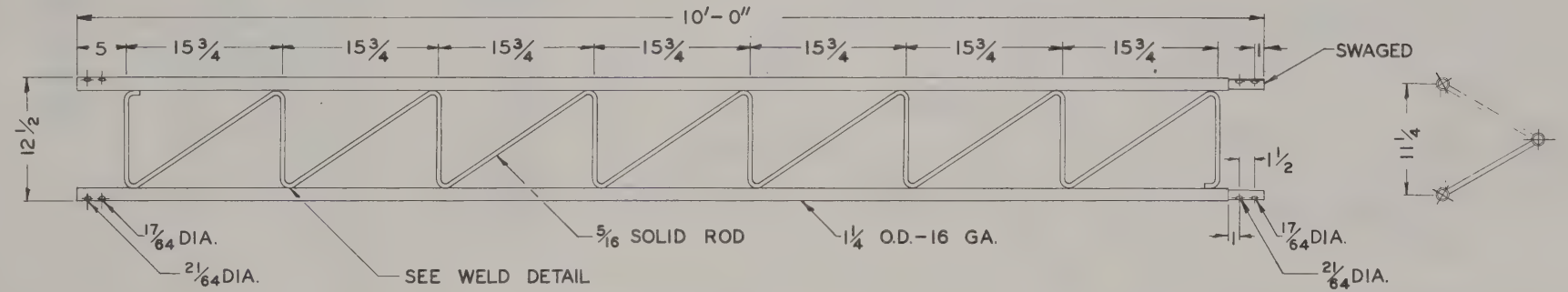
ELEVATION

WELD DETAIL



NOTE: SPECIFICATIONS OF TOP SECTIONS ARE SAME AS SECTION NO. 25G EXCEPT AS NOTED ABOVE.

STANDARD TOP SECTIONS



NO. 25G SECTION

3 - ¼" DIA. X 1½" LG., NF BOLTS
3 - 5/16" DIA. X 1½" LG., NF BOLTS

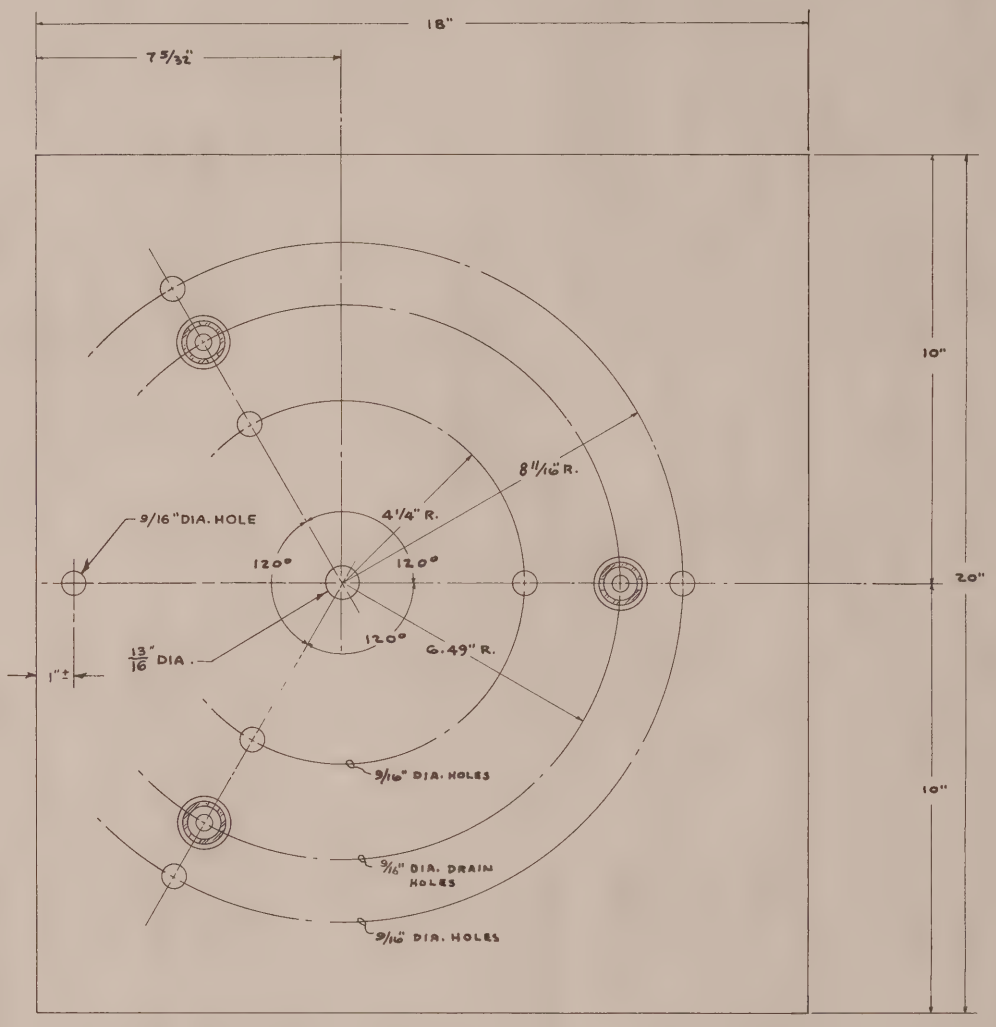
NOTE: ALL DIMENSIONS IN INCHES EXCEPT AS NOTED

R6 REVISED P/N 25AG4 5-12-78 AED

R5 6-15-77 J.H.D.
REVISED 4-20-67 R3: 3-28-72 R4: 11-26-73 JER

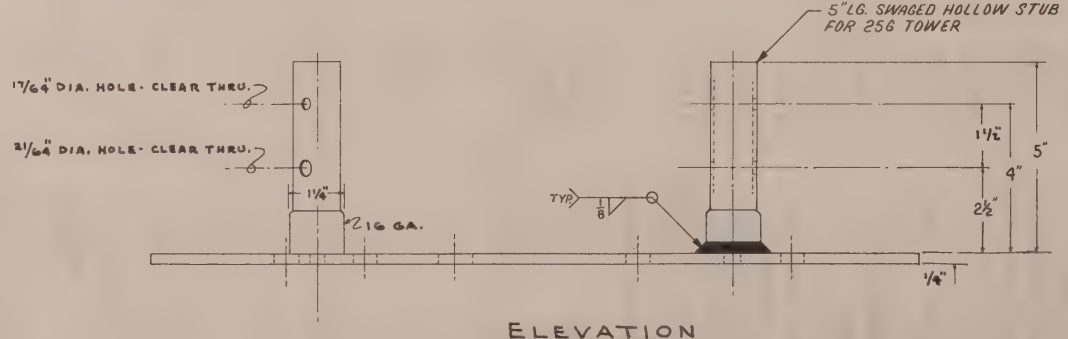
DRAWN RM	CUSTOMER	TITLE
CHECKED RER		MODEL 25 TOWER SECTION
APPROVED DWF		DRAWING NO.
DATE 6-25-63	ROHN MANUFACTURING PEORIA, ILLINOIS	C-630625-R6
SCALE NONE		

ILLINOIS B/P 1000-H



PLAN

R4 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.



ELEVATION

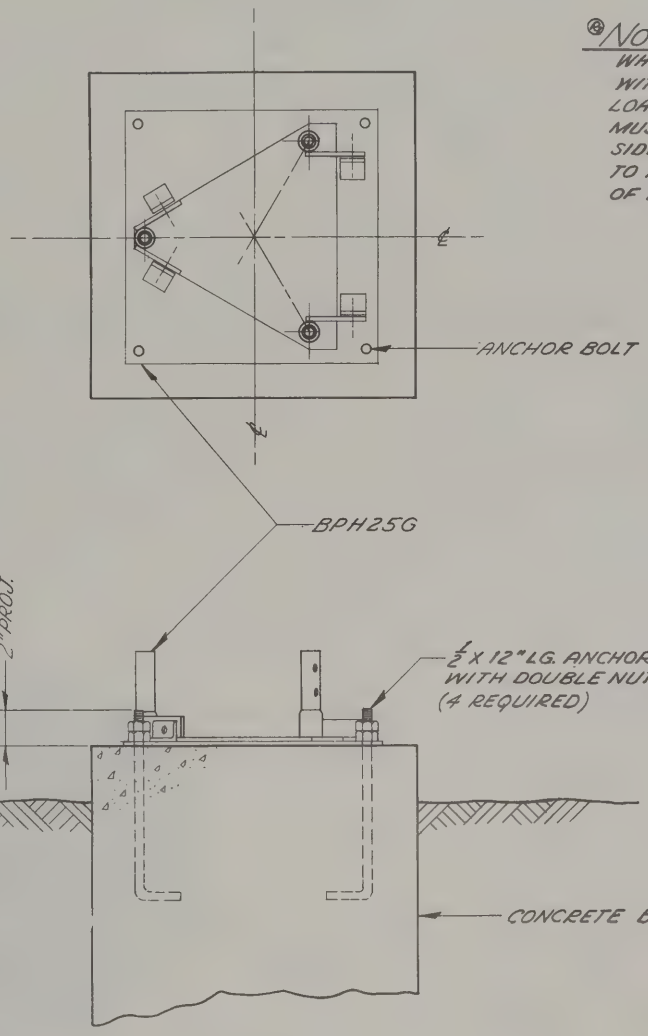
BASE PLATE FOR CONCRETE PIER (BPC-25G)

NOTE:
FOR USE WITH GUYED AND BRACKETED TOWERS ONLY.

R4	ADDED NOTE	7-6-76	DH
R3	REVISED STUB & ADDED WELD SYMBOL	1-9-75	RDB
R2	ADDED NOTE & REMOVED SCALE	11-26-73	JER

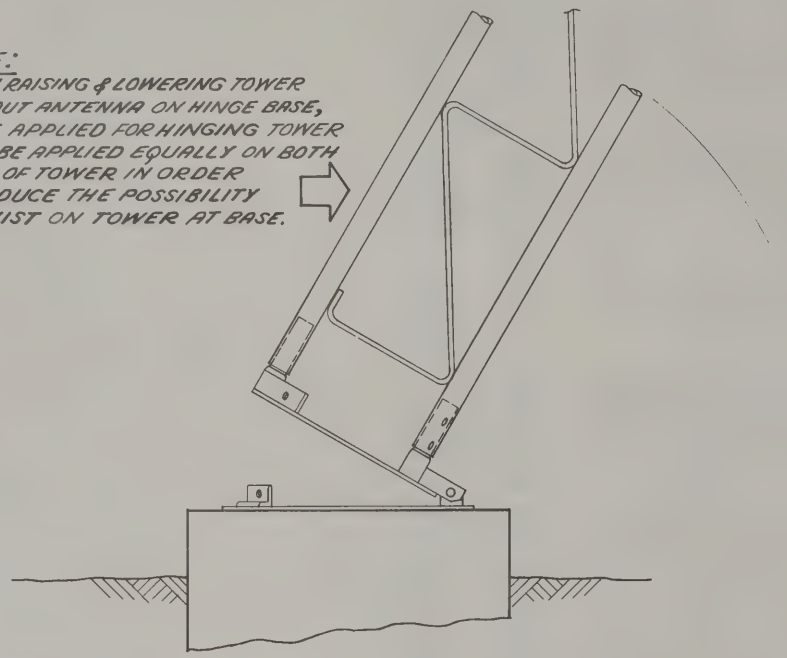
R1 REVISED 9-28-73 D.M.
R REVISED 6-5-69 O.H.

DRAWN ck	CUSTOMER	TITLE
CHECKED RAK		BASE PLATE FOR MODEL 25 TOWER
APPROVED ck		
DATE 8-31-61	ROHN MFG. PEORIA, ILLINOIS	DRAWING NO. C-610831R4
SCALE —		



NOTE: TOWERS MOUNTED ON THIS BASE MUST BE BRACKETED OR GUYED

® NOTE: WHEN RAISING & LOWERING TOWER WITHOUT ANTENNA ON HINGE BASE, LOADS APPLIED FOR HINGING TOWER MUST BE APPLIED EQUALLY ON BOTH SIDES OF TOWER IN ORDER TO REDUCE THE POSSIBILITY OF TWIST ON TOWER AT BASE.



IMPORTANT: BE SURE HINGE BOLTS ARE LOOSENED BEFORE ATTEMPTING TO FOLD TOWER OVER.

® NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

NO.	DESCRIPTION	DATE	BY
R2	ADDED NOTE	9-17-75	DH
R1	REVISED NOTE	8-27-75	DH

REVISIONS

ROHN® MANUFACTURING
DIVISION OF HEADCO

TITLE: BPH25G INSTALLATION

THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.

FILE NO.

SCALE ~	MATERIAL	FINISH	WT.
DWN. BY D.H.	DATE 2-12-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY	DATE 3-20-75	TOLERANCES: DEC. ± FRAC. ± ANGLES ±	DWG. NO. C-750112 R2
APP'D. ENG'NG. CW	DATE 3-20-75		
APP'D. SALES	DATE 3-20-75		

ROHN®

"FOLD-OVER" TOWERS

Patent No. 2,875,865

are your Best Answer for:

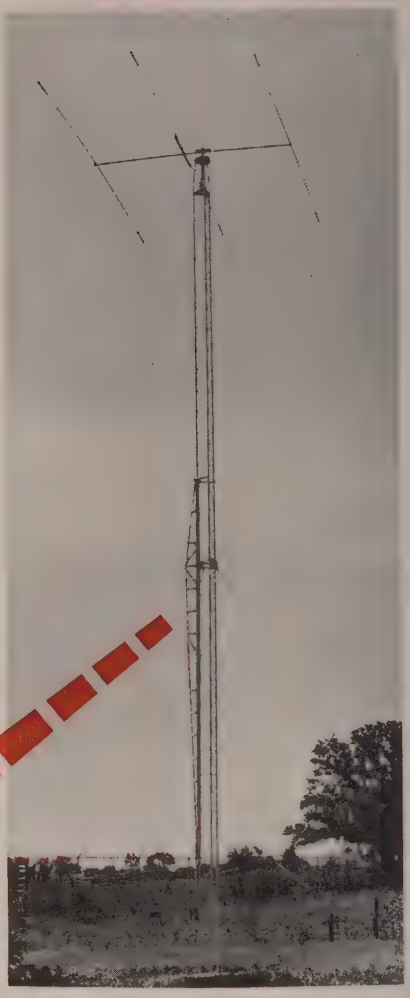
- **AMATEUR RADIO OPERATIONS**
- **TELEVISION ANTENNA SERVICING**
- **ANTENNA AND ROTATOR EXPERIMENTATION**
- **ENGINEERING AND TESTING**
- **ENVIRONMENTAL MONITORING AND METEOROLOGICAL INSTRUMENTATION**

and anyone who wants a TOWER where the antenna and rotator are INSTANTLY and SAFELY available at all times!

Get to the TOP...

ROHN "fold-over" Towers offer unbeatable safety. These towers let you work completely on the ground for antenna and rotator installation and servicing. This eliminates the hazard of climbing the tower and trying to work at heights that could mean serious injury in a fall. Also, the "fold-over" eliminates the risks of a crank-up or telescoping tower. So use the tower that reduces the risks of physical danger to an absolute minimum . . . the ROHN "fold-over"!

NOTE: ROHN does not recommend the use of crank-up towers. Crank-up towers can be dangerous even when operated with extreme care.



In seconds the entire tower top is folded over and accessible. When work is completed, tower is easily returned to up-right position and you never leave the ground!

The ROHN "fold-over" Towers are structurally designed to handle practically all sizes, types and models of amateur radio antennas. The towers are equilateral triangles with solid steel "zig-zag" cross bracing, all electric welded. Completed towers are approximately 50 feet in height. Guying or bracketing is necessary at the hinge. Check the Specification Sheet to obtain the many loads and conditions in which a ROHN "fold-over" Tower will serve your needs.

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without ever leaving the ground!

EASE OF INSTALLATION
ROHN "fold-over" Towers are quickly and easily installed. Photos indicate the general installation of these towers. Complete installation instructions included with every tower.

HOT DIP GALVANIZED... AFTER FABRICATION
for long life and protection against the elements.

REPUTATION
ROHN is one of the country's leading tower manufacturers, with 25 years of experience.

ADAPTABILITY
Two sizes for most every requirement:
No. 25 "fold-over" — uses No. 25 tower sections, which are 12½" equilateral triangle design.
No. 45 "fold-over" — uses No. 45 heavy duty tower sections, which are 18" equilateral triangle design.

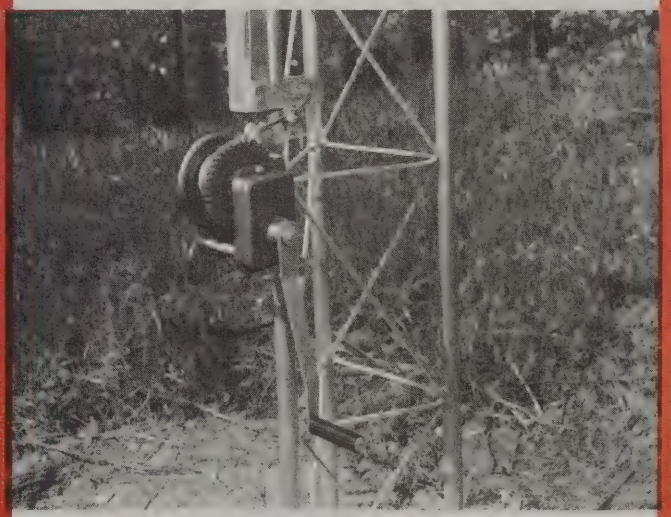
"Fold-over" component parts may be purchased separately in order to convert your standard No. 25 or No. 45 Tower into a "fold-over".

ACCESSORIES
See catalog for complete details.

QUALITY STEEL PRODUCTS BY

ROHN®

Shows installation of tower base section in concrete. Flat surface installation base also available.



Close-up of winch and crank mechanism.

The boom and hinge section, together with hinged guying, are detailed here.

Complete packaged ROHN "fold-over" Tower includes the necessary 10' tower sections, a top section, a short base section or flat roof mount, complete hinged section, boom, windlass with cable and hardware.

SPECIFICATIONS FOR ROHN FOLD-OVER TOWERS

ITEMS			MODEL FK-25			MODEL FK-45		
			48'	58'	68'	48'	58'	68'
MAX. LIFTING CAPACITY:			(ALL WINCH CABLE - 5/32" AIRCRAFT)					
SAFE MOMENT AT HINGE, FT.-LBS.			4150	4150	3110	9300	9300	8240
SAFE LOAD AT APEX, LBS.			160	160	115	190	190	135
ANTENNA LOADS—SAFE:			(USING 3/16"HS GUY WIRE)			(USING 1/4"HS GUY WIRE)		
WITH GUYS AT HINGE ONLY	20 PSF	AREA, SQ.FT.	6.2	6.2	2.3	15.2	15.2	8.3
		WEIGHT, LBS.	160	160	115	190	190	135
	30 PSF	AREA, SQ.FT.	3.0	3.0	---	8.9	8.9	3.8
		WEIGHT, LBS.	160	160	---	190	190	135
WITH GUYS AT APEX AND AT HINGE	20 PSF	AREA, SQ.FT.	13.3	15.4	11.7	29.1	34.8	28.4
		WEIGHT, LBS.	160	160	115	190	190	135
	30 PSF	AREA, SQ.FT.	7.7	8.9	6.2	18.1	21.9	17.2
		WEIGHT, LBS.	160	160	115	190	190	135
PHYSICAL PROPERTIES:								
TOWER HEIGHT ABOVE BASE, FT.			48	58	68	44	54	64
DISTANCE - BASE TO HINGE, FT.			21.5	31.5	31.5	19	29	29
DISTANCE - HINGE TO APEX, FT.			26.5	26.5	36.5	25	25	35
RADIUS REQUIRED FOR BOOM, FT.			18.6	18.6	18.6	16	16	16
WEIGHT - INCLUDING BOOM, LBS.			350	390	430	500	570	640
WIDTH OF TOWER TRIANGLE, IN.			12.5	12.5	12.5	18	18	18
SIDE RAIL DIAMETER, IN.			1.25	1.25	1.25	1.25	1.25	1.25
SIDE RAIL THICKNESS, GA.NO.			16	16	16	14	14	14
MAX. WINCH CABLE TENSION, LBS.			320	320	320	420	420	420

ALL FOLD-OVER TOWERS MUST BE GUYED OR BRACKETED AT THE HINGE.

DATE: 4-19-74 | DWG. NO. A-740203

NOTE: Antenna with large booms or elements used on ROHN "fold-over" Towers should always have additional guy at tower apex.

NOTE: Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

All antenna installations must be grounded per local or national codes.

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

FORM NO. 73408-R-1

PRINTED IN U.S.A.

February 1, 1977

NO. 25 FOLD-OVER TOWER
(Hot Dip Galvanized Finish After Fabrication)

PART NUMBER	Quantity	*Individual Part No.		WT.
FK25-48			Complete 48' Tower - Hinge at 21.5'	355
	3	25G	tower sections	120
	1	25AG-4	top section	31
	1	SB25G	short base section	10
	1	HS-25-FO	hinge section	56
	1	BM-25-FO	boom (2 pcs.) w/sleeve	118
	1	B-1200	winch	9
	1	MTG-PLT-25FO	winch plate w/2 saddle clamps	3
	1	A-CLP-25-FO	A-clamp for top of boom	3
	40'	5/32 CABLE	aircraft cable	
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	4	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	8	5/16X2-3/8BN	5/16" x 2-3/8" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	2	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	3/8X2-1/2BN	3/8" x 2½" bolts w/nuts	
	1	3/8X3-1/2BN	3/8" x 3½" bolt w/nut	
	Ground Installation - Must be Guyed or Bracketed at Hinge			
FK25-58			Complete 58' Tower - Hinge at 31.5'	400
	4	25G	tower sections	160
	1	25AG-4	top section	31
	1	SB25G	short base section	10
	1	HS-25-FO	hinge section	56
	1	BM-25-FO	boom (2 pcs.) w/sleeve	118
	1	B-1200	winch	9
	1	MTG-PLT-25FO	winch plate w/2 saddle clamps	3
	1	A-CLP-25-FO	A-clamp for top of boom	3
	50'	5/32 CABLE	aircraft cable	
	1	PUL-25-FO	pulley w/2 saddle clamps	7
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	4	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	12	5/16X2-3/8BN	5/16" x 2-3/8" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	2	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	3/8X2-1/2BN	3/8" x 2½" bolts w/nuts	
	1	3/8X3-1/2BN	3/8" x 3½" bolt w/nut	
	Ground Installation - Must be Guyed or Bracketed at Hinge			
FK25-68			Complete 68' Tower - Hinge at 31.5'	440
	5	25G	tower sections	200
	1	25AG-4	top section	31
	1	SB25G	short base section	10
	1	HS-25-FO	hinge section	56
	1	BM-25-FO	boom (2 pcs.) w/sleeve	118
	1	B-1200	winch	9
	1	MTG-PLT-25FO	winch plate w/2 saddle clamps	3
	1	A-CLP-25-FO	A-clamp for top of boom	3
	50'	5/32 CABLE	aircraft cable	
	1	PUL-25-FO	pulley w/2 saddle clamps	7
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	4	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	12	5/16X2-3/8BN	5/16" x 2-3/8" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	2	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	3/8X2-1/2BN	3/8" x 2½" bolts w/nuts	
	1	3/8X3-1/2BN	3/8" x 3½" bolt w/nut	
	Ground Installation - Must be Guyed or Bracketed at Hinge			

Items listed below line are those parts required to convert existing installation to a fold-over tower. Conversion kit can be ordered separately. See FOK part numbers. Guy kit not included.

*Items may be purchased separately. Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

NO. 25 FOLD-OVER TOWER

PART NUMBER		WT.
GGK25G-1	Hinge Ground Guy Kit for all No. 25 Fold-Over Towers	51

Quantity	*Individual Part No.	
185'	3/16EHS	3/16" EHS galvanized guy wire
24	3/16CCM	3/16" cable clamps, malleable
8	1/4TH	1/4" thimbles
4	1/2TB-E&J	1/2" x 12" galvanized turnbuckles, E&J
4	GAS-604	screw guy anchors

For guying at hinge only.

GGK25G-2	Double Ground Guy Kit for all No. 25 Fold-Over Towers	82

500'	3/16EHS	3/16" EHS galvanized guy wire
48	3/16CCM	3/16" cable clamps, malleable
12	1/4TH	1/4" thimbles
8	1/2TB-E&J	1/2" x 12" galvanized turnbuckles, E&J
4	GAS-604	screw guy anchors

For guying at hinge only.

Kits to Convert Existing 25G Tower to Fold-Over

4825FOK	For 48' No. 25 Fold-Over Tower. Standard straight tower sections or base section are not included. Items included are listed below line under Part No. FK25-48.	200
6825FOK	For 58' or 68' No. 25 Fold-Over Tower. Standard straight tower sections or base section are not included. Items included are listed below line under Part No. FK25-58 or FK25-68.	210

MISCELLANEOUS ITEMS AVAILABLE

*TB-2	Thrust bearing, ball bearing, self-aligning, for 2" O.D. tubing, bolts to 25AG-4 top section	8
*TB-3	Heavy duty thrust bearing, recommended for 2" O.D. tubing	2½
*AS25G	Accessory shelf. Triangular plate with 2¼" hole to mount amateur rotor or mast bearing. Mounts inside tower section.	4
*AB	Amateur bearing - 2"x4"x10" hardwood for use with 25AG-4 top section	1
*M200	Antenna mast galvanized, 10' long, 2" O.D., 16 gauge	14
*M200H	Antenna mast galvanized, 10' long, 2" O.D., 1/8" wall	30
*HB25AG	Adjustable house bracket (0 to 15")	8
*HB25BG	Adjustable house bracket (0 to 24")	12
*HB25CG	Adjustable house bracket (0 to 36")	17
*EB2515G	Eave bracket (15")	5
*EB2524G	Eave bracket (24")	6
*EB2525G	Eave bracket (universal)	7

If roof installation is required, please specify and appropriate items will be substituted at no charge.

All fold-over towers can be supplied with optional top sections. See 25G tower sheets and specify on your order.

Fold-over towers must be guyed or bracketed at hinge. See complete guy kits, as well as fold-over tower specifications showing how your particular requirements should be guyed or bracketed.

*Items may be purchased separately.

Refer to alphabetical/numerical price list for current prices.

The price on all fold-over towers will be higher on shipments to the following states: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Alaska, Hawaii and Alberta, B.C. and Sask., Canada.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

INSTALLATION INSTRUCTIONS FOR #25 FOLD-OVER TOWER

SELECTION OF TOWER LOCATION: Select a position sufficiently clear of trees, wires, buildings, etc., to permit a free swing of the hinged portion of the tower, antenna and boom. The tower should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous. The location should be suitable for placing four guy anchors at distances indicated on drawing.

GENERAL INSTALLATION: The tower should be installed by experienced and trained personnel.

BOLTS: Nuts and bolts are located in tower leg.

INSTALLATION OF BASE SECTION: Dig a hole 24" square by approximately 36" deep. Spread about 2" of gravel in the bottom of the hole prior to setting the short base section; then set the base section on the gravel, being sure the correct end is up, and fill another 3" with gravel around the legs of the base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. Before pouring the concrete, coat the base section in an area about 3" above and 3" below the space where the top of the concrete base will be, using a waterproof asphalt type material. If the tower is near a building, set the base so that two of the tower legs lie in a plane perpendicular to the wall of the building. This will cause the hinge axis to also be at right angles to the wall and the tower will fold without interference from the building. With the base thus set, pour the concrete around it and check its plumb with a carpenter's level on one or more of the legs of the tower. Crown the top of the concrete slightly to hasten water runoff. (This paragraph does not apply to roof flat surface installations.)

ERECTION OF THE TOWER: After the concrete has hardened with the first section in place, continue with the second section. This is hastened if an erection fixture is used. An additional 10' tower section can be added below and above the hinged section (see drawing) to bring the total height of the tower to 58' or 68'.

HINGED SECTION: With the shipping tab bolted closed, lift the hinged section into place, being sure to place the hinge on the correct side of the tower. Guy wires are then installed on the guying tabs near the hinge point (see drawing). The boom is then installed on the hinged section. Be sure hinge bolts are loosened before attempting to fold tower over.

If practical, a house bracket or eave bracket may be used at the hinge point in place of guy wires. The bracket must be placed within 2' of the hinge point.

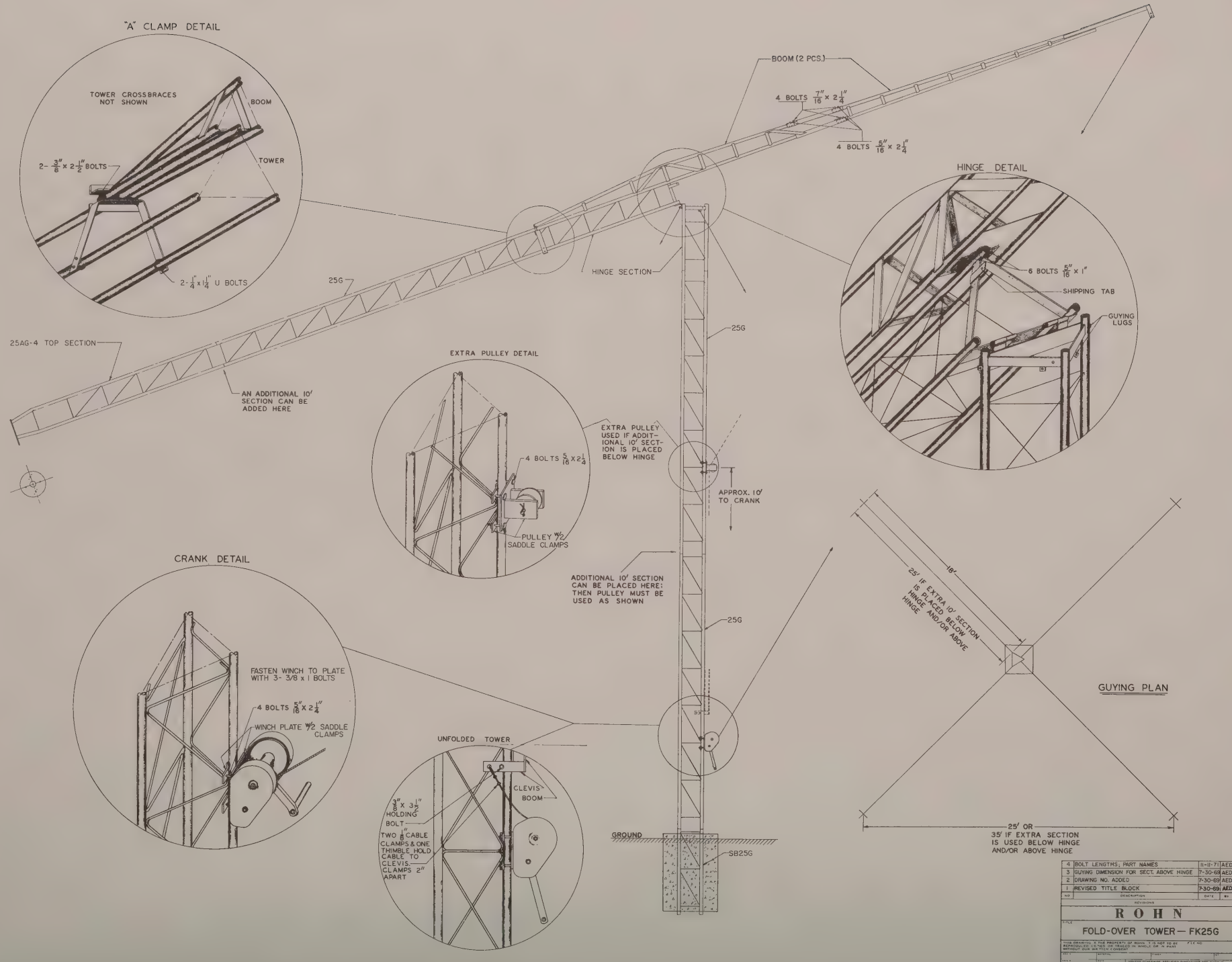
ASSEMBLY OF BOOM: With the use of a long tapered punch, bring the bolt holes of the two parts of the boom into alignment. Be careful not to enlarge the bolt holes. Tighten the bolts until the sleeves are slightly flattened so they grip the tubing within.

INSTALLATION OF BOOM (LEVER) SECTION: First, leaving the hinge section bolted closed, hoist the boom into position and fasten it to the hinge section by means of the six 5/16" x 1" bolts as shown in "Hinge Detail" on the drawing. Next, secure the extreme top of the boom, using the "A" clamp with two 3/8" x 2-1/2" bolts and two U-bolts (see drawing). Do not tighten the U-bolts too tightly.

INSTALLATION OF FINAL SECTIONS: Erect the remaining sections in the usual manner. All bolts securing legs should be tightened enough to partially flatten the outer sleeve until it actually grips the leg within it.

INSTALLATION OF WINCH AND CABLE MECHANISM: Bolt the winch and cable mechanism to the tower leg of the lower section of the tower, just below the clevis on the boom, with the four 5/16" x 2-1/4" bolts and saddle clamps as shown in the drawing. If an additional 10' tower section is placed below the hinge section, the extra pulley must be installed just below the clevis on the boom (see drawing). Cable must be secured with two cable clamps and one wire rope thimble to the boom clevis and with two cable clamps to the winch.

THE ABOVE INSTRUCTIONS ARE FACTORY TESTED. PLEASE FOLLOW CAREFULLY.


"A" CLAMP DETAIL
TOWER CROSSBRACES NOT SHOWN
BOOM
TOWER
2- 3/8" x 2 1/2" BOLTS
2- 1/4" x 1 1/4" U BOLTS
BOOM (2 PCS.)
4 BOLTS 7/16" x 2 1/4"
4 BOLTS 5/16" x 2 1/4"
HINGE DETAIL
6 BOLTS 5/16" x 1"
SHIPPING TAB
GUYING LUGS
25G
HINGE SECTION
25AG-4 TOP SECTION
AN ADDITIONAL 10' SECTION CAN BE ADDED HERE
EXTRA PULLEY DETAIL
EXTRA PULLEY USED IF ADDITIONAL 10' SECTION IS PLACED BELOW HINGE
4 BOLTS 5/16 X 2 1/4
PULLEY W/2 SADDLE CLAMPS
APPROX. 10' TO CRANK
ADDITIONAL 10' SECTION CAN BE PLACED HERE; THEN PULLEY MUST BE USED AS SHOWN
CRANK DETAIL
FASTEN WINCH TO PLATE WITH 3- 3/8 x 1 BOLTS
4 BOLTS 5/16 X 2 1/4
WINCH PLATE W/2 SADDLE CLAMPS
UNFOLDED TOWER
CLEVIS
BOOM
3/8" X 3 1/2" HOLDING BOLT
TWO 1/8" CABLE CLAMPS & ONE THIMBLE HOLD CABLE TO CLEVIS. CLAMPS 2" APART
GROUND
SB25G
18'
25' IF EXTRA 10' SECTION IS PLACED BELOW HINGE AND/OR ABOVE HINGE
GUYING PLAN
25' OR 35' IF EXTRA SECTION IS USED BELOW HINGE AND/OR ABOVE HINGE

NO	DESCRIPTION	DATE	BY
4	BOLT LENGTHS, PART NAMES	11-17-71	AED
3	GUYING DIMENSION FOR SECT. ABOVE HINGE	7-30-69	AED
2	DRAWING NO. ADDED	7-30-69	AED
1	REVISED TITLE BLOCK	7-30-69	AED

REVISIONS

ROHN

FOLD-OVER TOWER — FK25G

D-690603 RI

April 1, 1974

NO. 45 FOLD-OVER TOWER
(Hot Dip Galvanized Finish After Fabrication)

PART NUMBER	Quantity	*Individual Part No.		WT.
FK45-48			Complete 48' Tower - Hinge at 19'	520
	3	45G	tower sections	210
	1	45AG-4	top section	52
	1	HS-45-FO	hinge section	100
	1	BM-45-FO	boom (2 pcs.) w/sleeve	128
	1	B-1500	winch	12
	1	MTG-PLT-45FO	winch plate w/2 saddle clamps	3
	1	A-CLP-45-FO	A-clamp for top of boom	3
	40'	5/32 CABLE	aircraft cable	
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	19	7/16X2-1/4BN	7/16" x 2¼" bolts w/nuts	
	23	5/16X2-1/4BN	5/16" x 2¼" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	4	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	1	3/4X3-1/2BP	3/4" x 3½" boom pin w/cotter pin	
Ground Installation - Must be Guyed or Bracketed at Hinge				
FK45-58			Complete 58' Tower - Hinge at 29'	590
	4	45G	tower sections	280
	1	45AG-4	top section	52
	1	HS-45-FO	hinge section	100
	1	BM-45-FO	boom (2 pcs.) w/sleeve	128
	1	B-1500	winch	12
	1	MTG-PLT-45FO	winch plate w/2 saddle clamps	3
	1	A-CLP-45-FO	A-clamp for top of boom	3
	50'	5/32 CABLE	aircraft cable	
	1	PUL-45-FO	pulley w/2 saddle clamps	7
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	22	7/16X2-1/4BN	7/16" x 2¼" bolts w/nuts	
	30	5/16X2-1/4BN	5/16" x 2¼" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	4	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	1	3/4X3-1/2BP	3/4" x 3½" boom pin w/cotter pin	
Ground Installation - Must be Guyed or Bracketed at Hinge				
FK45-68			Complete 68' Tower - Hinge at 29'	660
	5	45G	tower sections	350
	1	45AG-4	top section	52
	1	HS-45-FO	hinge section	100
	1	BM-45-FO	boom (2 pcs.) w/sleeve	128
	1	B-1500	winch	12
	1	MTG-PLT-45FO	winch plate w/2 saddle clamps	3
	1	A-CLP-45-FO	A-clamp for top of boom	3
	50'	5/32 CABLE	aircraft cable	
	1	PUL-45-FO	pulley w/2 saddle clamps	7
	2	1/8CCM	1/8" cable clamps, malleable	
	1	1/4TH	1/4" thimble	
	22	7/16X2-1/4BN	7/16" x 2¼" bolts w/nuts	
	30	5/16X2-1/4BN	5/16" x 2¼" bolts w/nuts	
	3	3/8X1CBN	3/8" x 1" bolts w/nuts, countersunk	
	6	5/16X1BN	5/16" x 1" bolts w/nuts	
	4	1/4X1-1/4UBN	1/4" x 1¼" U-bolts w/nuts	
	2	7/16X2-1/2BN	7/16" x 2½" bolts w/nuts	
	1	3/4X3-1/2BP	3/4" x 3½" boom pin w/cotter pin	
Ground Installation - Must be Guyed or Bracketed at Hinge				

Items listed below line are those parts required to convert existing installation to a fold-over tower. Conversion kit can be ordered separately. See FOK part numbers. Guy kit not included.

*Items may be purchased separately.

Refer to alphabetic/numeric price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

NO. 45 FOLD-OVER TOWER

PART NUMBER			WT.
GGK45G-1	Hinge Ground Guy Kit for all No. 45 Fold-Over Towers		60
	Quantity	*Individual Part No.	
	185'	1/4EHS	1/4" EHS galvanized guy wire
	24	1/4CCM	1/4" cable clamps, malleable
	8	1/4TH	1/4" thimbles
	4	1/2TB-E&J	1/2" x 12" galvanized turnbuckles, E&J
	4	GAS-604	screw guy anchors
	For guying at hinge only.		
GGK45G-2	Double Ground Guy Kit for all No. 45 Fold-Over Towers		108
	500'	1/4EHS	1/4" EHS galvanized guy wire
	48	1/4CCM	1/4" cable clamps, malleable
	12	1/4TH	1/4" thimbles
	8	1/2TB-E&J	1/2" x 12" galvanized turnbuckles, E&J
	4	GAS-604	screw guy anchors
	For guying at hinge and top.		

Kits to Convert Existing 45G Tower to Fold-Over

4845FOK	For 48' No. 45 Fold-Over Tower. Standard straight tower sections are not included. Items included are listed below line under Part No. FK45-48.	250
6845FOK	For 58' or 68' No. 45 Fold-Over Tower. Standard straight tower sections are not included. Items included are listed below line under Part No. FK45-58 or FK45-68.	260

MISCELLANEOUS ITEMS AVAILABLE

*TB-2	Thrust bearing, ball bearing, self-aligning, for 2" O.D. tubing, bolts to 45AG-4 top section	8
*AB	Amateur bearing - 2"x4"x10" hardwood for use with 45AG-4 top section	1
*AS45G	Accessory shelf - triangular plate w/2¼" hole to mount amateur rotor or mast bearing. Mounts inside tower section.	4
*M200	Antenna mast galvanized, 10' long, 2" O.D., 16 gauge	14
*M200H	Antenna mast galvanized, 10' long, 2" O.D., 1/8" wall	30
*HB45AG	Adjustable house bracket (up to 15")	10
*HB45BG	Adjustable house bracket (15" to 24")	13
*HB45CG	Adjustable house bracket (24" to 36")	19

If roof installation is required, please specify and appropriate items will be substituted at no charge.

All fold-over towers can be supplied with optional top sections. See 45G tower sheets and specify on your order.

Fold-over towers must be guyed or bracketed at hinge. See complete guy kits, as well as fold-over tower specifications showing how your particular requirements should be guyed or bracketed.

*Items may be purchased separately. Refer to alphabetical/numerical price list for current prices.

The price on all fold-over towers will be higher on shipments to the following states: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Alaska, Hawaii and Alberta, B.C. and Sask., Canada.

January 1, 1975

INSTALLATION INSTRUCTIONS FOR ROHN #45 FOLD-OVER TOWER

SELECTION OF TOWER LOCATION: Select a position sufficiently clear of trees, wires, buildings, etc., to permit a free swing of the hinged portion of the tower, antenna and boom. The location should be suitable for placing four guy anchors at distances indicated on drawing.

INSTALLATION OF BASE SECTION: Dig a hole 30" square by approximately 36" deep. Spread about 2" of gravel in the bottom of the hole prior to setting the first section; then set the section on the gravel, being sure the large sleeve end is down, and fill another 3" with gravel around the legs of the base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. Before pouring the concrete, coat the base section in an area about 3" above and 3" below the space where the top of the concrete base will be, using a waterproof asphalt type material. If the tower is near a building, set the base so that two of the tower legs lie in a plane perpendicular to the wall of the building. This will cause the hinge axis to also be at right angles to the wall and the tower will fold without interference from the building. With the base thus set, pour the concrete around it and check its plumb with a carpenter's level on one or more of the legs of the tower. Crown the top of the concrete slightly to hasten water runoff. (This paragraph does not apply to roof flat surface installations.)

ERECTION OF THE TOWER: After the concrete has hardened with the first section in place, continue with the second section. This is hastened if an erection fixture is used. An additional 10' tower section can be added below and above the hinged section (see drawing) to bring the total height to 54' or 64'.

HINGED SECTION: With the shipping tab bolted closed, lift the hinged section into place, being sure to place the hinge on the correct side of the tower. Guy wires are then installed on the guying tabs near the hinge point (see drawing). The boom is then installed on the hinged section. Be sure hinge bolts are loosened before attempting to fold tower over.

If practical, a house bracket or eave bracket may be used at the hinge point in place of guy wire. The bracket must be placed within 2' of the hinge point.

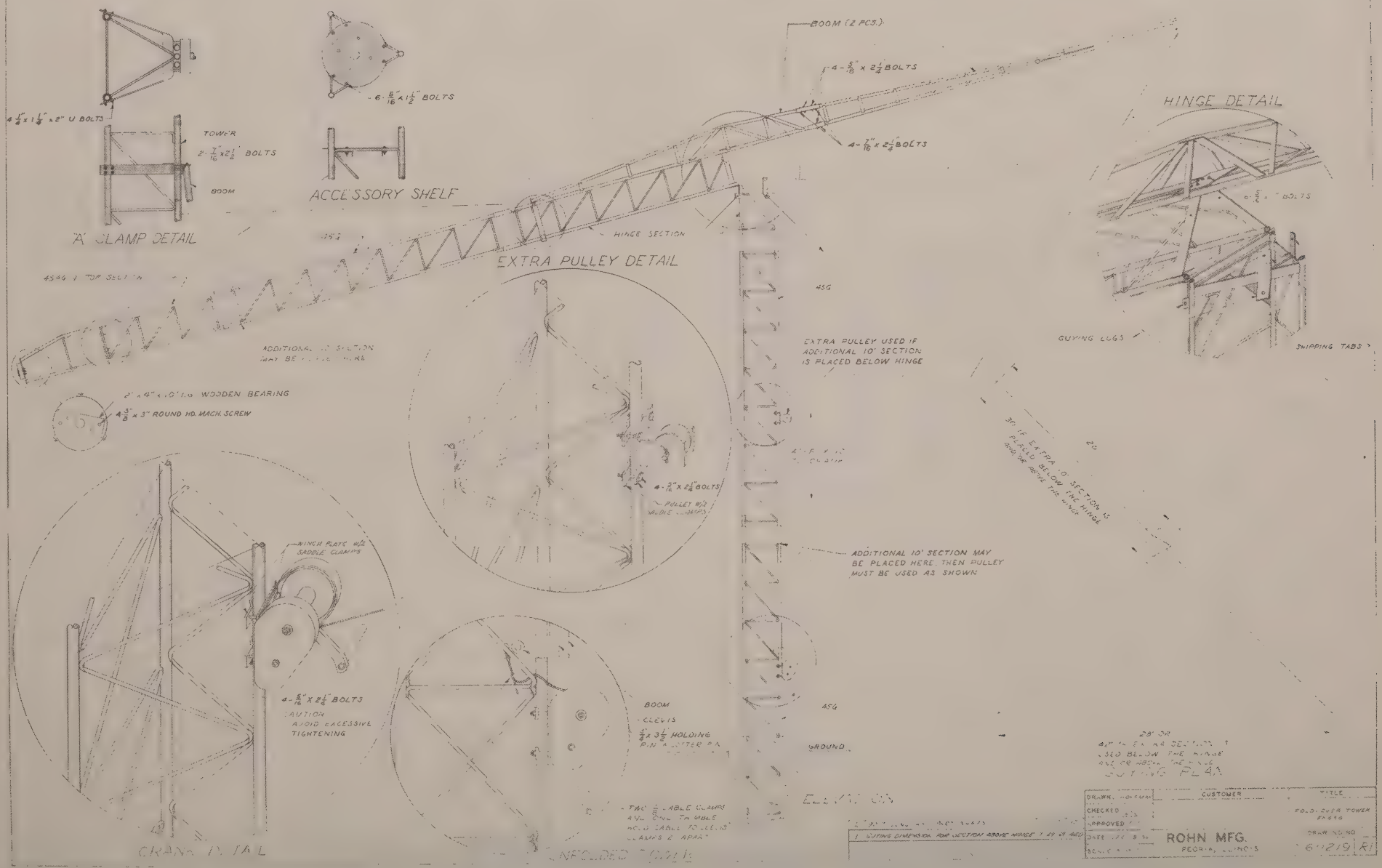
ASSEMBLY OF BOOM: With the use of a long tapered punch, bring the bolt holes of the two parts of the boom into alignment. Be careful not to enlarge the bolt holes. Tighten the bolts until the sleeves are slightly flattened so they grip the tubing within.

INSTALLATION OF BOOM (LEVER) SECTION: First, leaving the hinge section bolted closed, hoist the boom into position and fasten it to the hinge section by means of the six 5/16" x 1" bolts as shown in "Hinge Detail" on the drawing. Next, secure the extreme top of the boom, using the "A" clamp with two 7/16" x 2-1/2" bolts and four U-bolts (see drawing). Do not tighten the U-bolts too tightly.

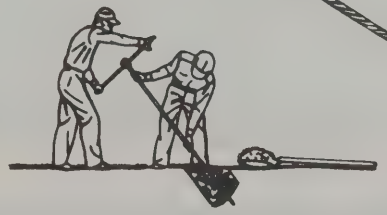
INSTALLATION OF FINAL SECTIONS: Erect the remaining sections in the usual manner. All bolts securing legs should be tightened enough to partially flatten the outer sleeve until it actually grips the leg within it.

INSTALLATION OF WINCH AND CABLE MECHANISM: Bolt the winch and cable mechanism to the tower leg of the lower section of the tower, just below the clevis on the boom, with the four 5/16" x 2-1/4" bolts and saddle clamps as shown in the drawing. If an additional 10' tower section is placed below the hinge section, extra pulley must be installed just below the clevis on the boom (see drawing). Cable must be secured with two cable clamps and one wire rope thimble to the boom clevis and with two cable clamps to the winch.

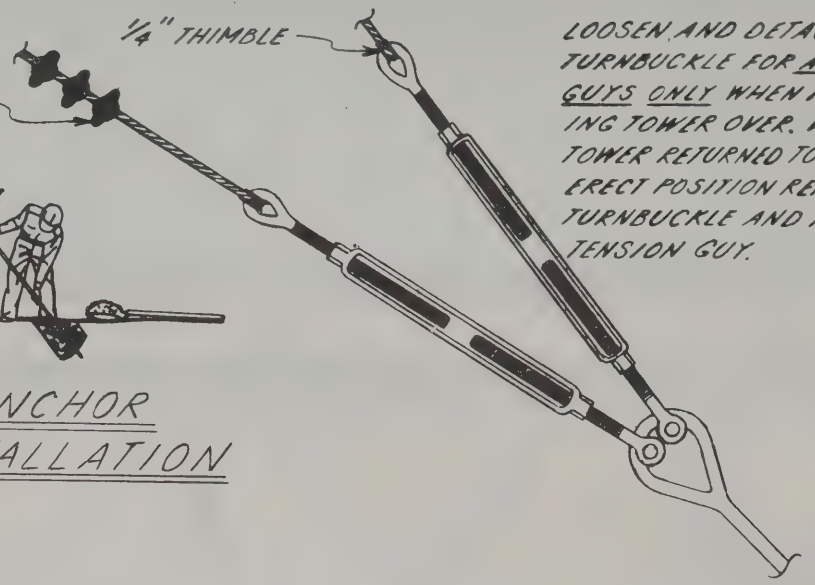
THE ABOVE INSTRUCTIONS ARE FACTORY TESTED. PLEASE FOLLOW CAREFULLY.


BOOM (2 PCS.)
4 - 5/8" x 2 1/2" BOLTS
4 - 7/16" x 2 1/4" BOLTS
HINGE DETAIL
6 - 5/16" x 1 1/2" BOLTS
4 1/2" x 1 1/8" x 2" U BOLTS
TOWER
2 - 7/16" x 2 1/2" BOLTS
BOOM
"A" CLAMP DETAIL
ACCESSORY SHELF
HINGE SECTION
EXTRA PULLEY DETAIL
45SG
EXTRA PULLEY USED IF ADDITIONAL 10' SECTION IS PLACED BELOW HINGE
GUYING LUGS
SHIPPING TABS
2" x 4" x 1'-0" LG. WOODEN BEARING
4 3/8" x 3" ROUND HD. MACH. SCREW
4 - 7/16" x 2 1/2" BOLTS
PULLEY W/2 SADDLE CLAMPS
ADDITIONAL 10' SECTION MAY BE PLACED HERE. THEN PULLEY MUST BE USED AS SHOWN
WINCH PLATE W/2 SADDLE CLAMPS
4 - 5/16" x 2 1/2" BOLTS
CAUTION AVOID EXCESSIVE TIGHTENING
BOOM CLEVIS
3/4 x 3 1/2 HOLDING PIN
GROUND
CRANK DETAIL
ROHN MFG.
PEORIA, ILLINOIS
6'12'19 R1

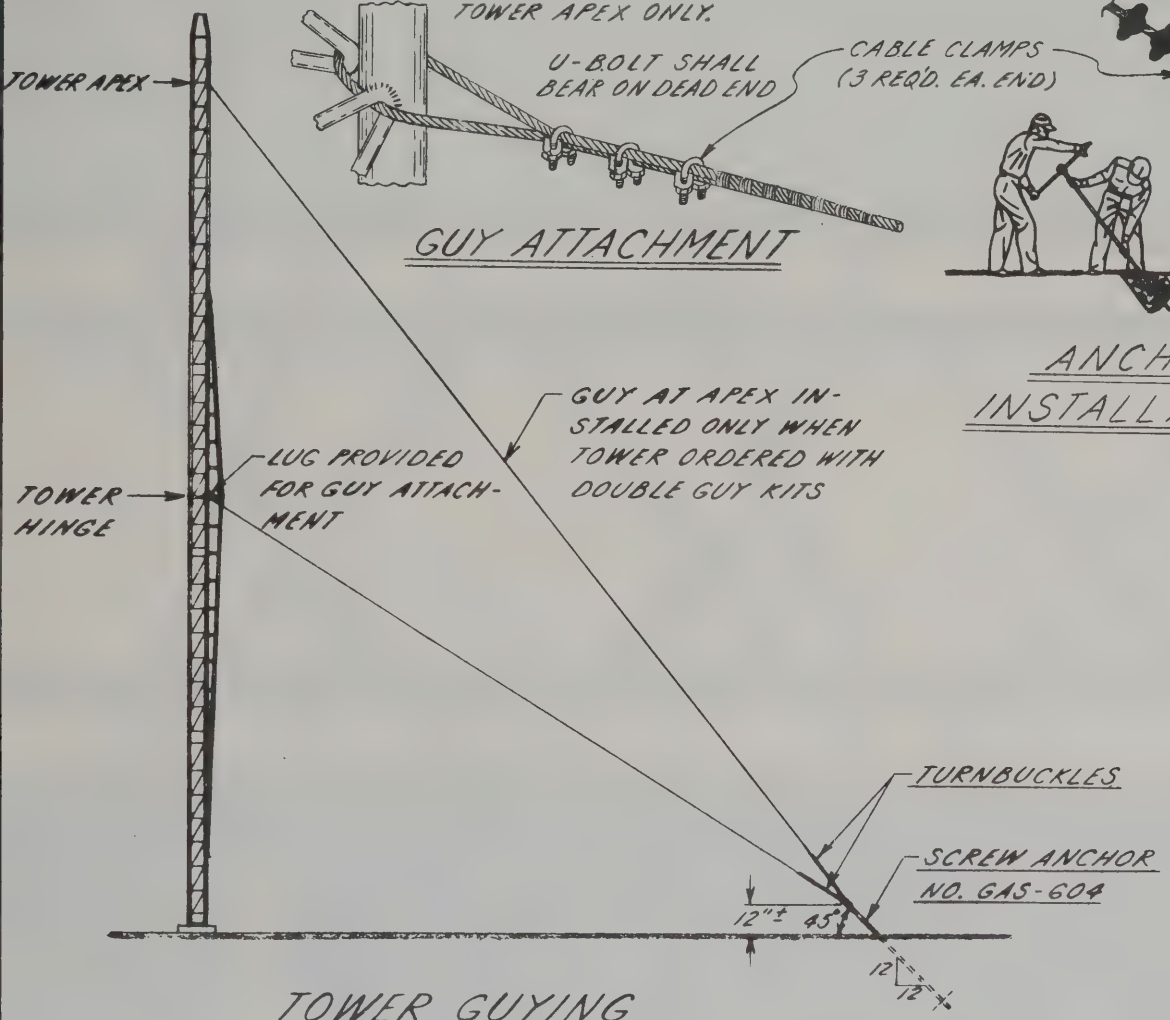
GUY ATTACHMENT



ANCHOR INSTALLATION


1/4" THIMBLE
LOOSEN AND DETACH TURNBUCKLE FOR APEX GUYS ONLY WHEN FOLDING TOWER OVER. WHEN TOWER RETURNED TO ERECT POSITION REPLACE TURNBUCKLE AND RE-TENSION GUY.

ANCHOR HEAD DETAIL



TOWER GUYING

REFERENCE DRAWINGS

TOWER NO. FK25G - - - - D-690603R,
TOWER NO. FK45G - - - - D-611219R,
GUY WIRE ATTACHMENT - B-690712
TURNBUCKLE SAFETY - - - B-680324

NO.	DESCRIPTION	DATE	BY
REVISIONS			

ROHN® MANUFACTURING
DIVISION OF BRANDT

TITLE: INSTALLATION DETAILS for FOLD-OVER TOWER

THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.

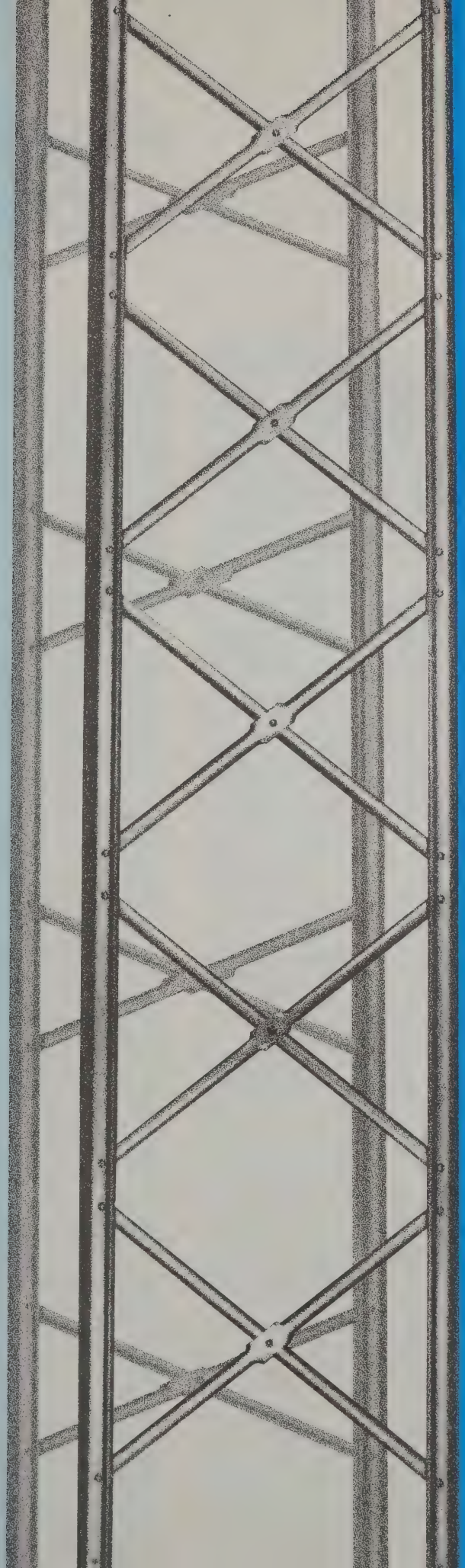
FILE NO.

SCALE	MATERIAL	FINISH	WT.
NONE			

DWN. BY GLS	DATE 1/4/75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES
CK'D. BY WRL	DATE 1-8-75	TOLERANCES: DEC. ± FRAC. ± ANGLES ±
APP'D. ENGRG. CW	DATE 1-8-75	DWG. NO. B-750008
APP'D. SALES PHL	DATE 1-8-75	

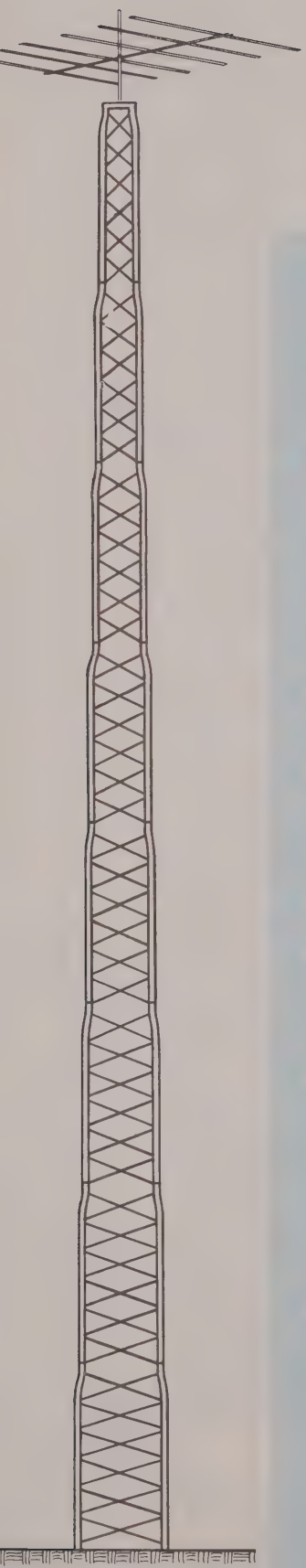
GAF 880-250 2-72 48191

PRINTED IN U.S.A.



For Home TV
Ham Radio
and CB

Rohn
"BX" Towers



Rohn

STANDARD
BX

Most Basic Tower Needs

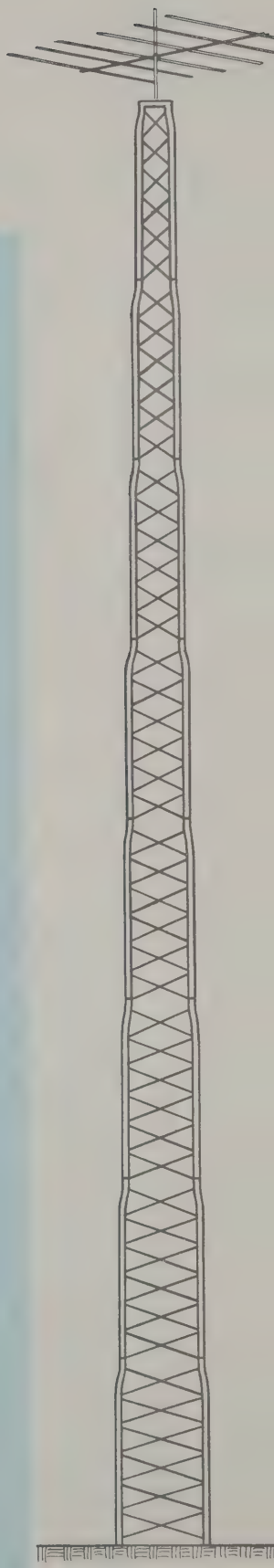
- Up to 6 sq. ft. antenna capacity (see specifications)
- Available to 64′ in 8′ sections
- "X" Brace design gives greater strength — braces riveted in center as well as at ends
- Greater width and weight at bottom — for greater strength
- Beaded channel leg for added strength
- All riveted construction — no welds
- All steel — galvanized for added life
- Can be used with Concrete Base Stubs, Cylinder Base or Hinged Concrete Base (see tower accessories chart)
- Tower can be assembled on the ground and hinged up or built vertically, section upon section
- Rotators easily installed
- Physical properties and specifications available
- Compact Nested 48′ Tower Package — takes only 2 sq. ft. floor space

HEAVY DUTY
HBX

For Heavier Capacity

- Has same structural features as BX
- Up to 10 sq. ft. antenna capacity (see specifications)
- Available to 56′ in 8′ sections
- This tower will hold larger antennas and rotators than standard BX tower. Top of HBX tower is a 10-3/16″ triangle
- Rotators easily installed
- Can be used with Concrete Base Stubs or Hinged Concrete Base (see tower accessories chart)
- Tower can be assembled on the ground and hinged up or built vertically, section upon section
- Physical properties and specifications available
- Compact Nested 56′ Tower Package — takes only 2-1/2 sq. ft. floor space

BX TOWERS
For TV, Ham, CB Installations



EXTRA HEAVY DUTY
HDBX

Our Heaviest BX Tower

- Has same structural feature as BX
- Up to 18 sq. ft. antenna capacity (see specifications)
- Available to 48′ in 8′ sections
- Due to design structure this tower will withstand greater loading than other models. Top of HBDX tower is a 12-3/4″ triangle
- Rotators easily installed
- Can be used with Concrete Base Stubs or Hinged Concrete Base (see tower accessories chart)
- Tower can be assembled on the ground and hinged up or built vertically, section upon section
- Physical properties and specifications available
- Compact Nested 48′ Tower Package — takes only 2-1/2 sq. ft. floor space

ECONOMY
EX

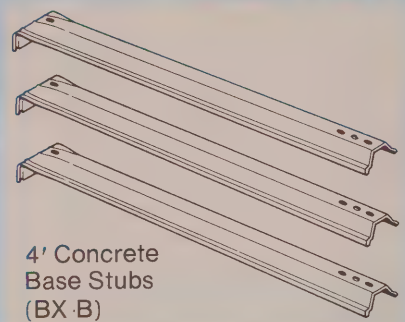
Bracketed Installation

- Available to 40′ in 8′ sections
- Has same design features as BX
- An excellent tower for the economy minded person
- Tower size the same as the top tower sections of the standard BX tower
- Higher quality than most competitive towers
- EX towers can be ground mounted with Base Plate or roof mounted with the adjustable Hinged Roof Mount (see tower accessories chart)

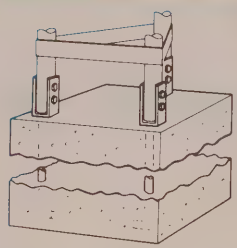
Towers As Packed For Shipping

- BX, HBX, HDBX are shipped with: mast hardware kit (BX-MK2 or XT-2 and XR-2 for HBX, XT-3 and XR-3 for HDBX), A mast clamp (FL), 8′ mast M-8).
  BASE MUST BE ORDERED SEPARATELY. Bases (BX B, BX-HC and BX-CA) are illustrated on back page.
- EX Towers are shipped with: mast hardware kit (BX-MK2), base plate (EX-B), drive rods (EX-DR) and house bracket (EX-H). If roof mount (EX-R) is desired IT MUST BE ORDERED SEPARATELY.

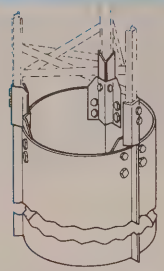
Tower Accessories



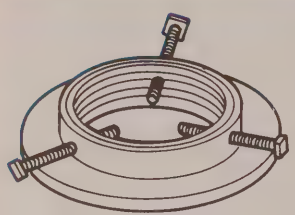
4′ Concrete
Base Stubs
(BX-B)



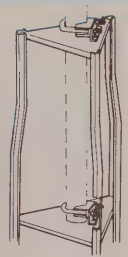
Hinged Concrete Base
(BX-HC)



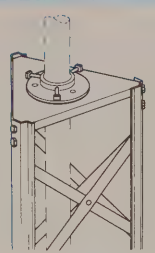
4′ Cylinder Base
(BX-CA)



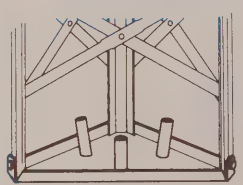
Heavy Duty Mast Clamp
(FL)



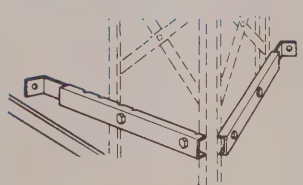
Mast Hardware Kit
(BX-MK2)



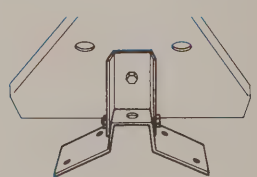
Top Plate Assembly (XT)
Heavy Duty Mast Clamp (FL)



Base Plate (EX-B1)



Adjustable House Bracket
(EX-H1) 4″ to 18″)
(EX-H2) 8″ to 24″)



Universal Roof Mount
(EX-R1)

Tower "Package" — compact shipping and storage method. Includes all necessary parts and hardware.

All towers are recommended to be bracketed for extra safety and to withstand gusty wind conditions.

Note: Local building and/or zoning laws frequently require a building permit. Available BX Engineering Data should be submitted for approval prior to purchasing a tower.

NOTE: Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

All antenna installations must be grounded per local or national codes.

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

Form No. 76660
Printed in U.S.A.

SHEET D-1333
(Replaces D-1257)

November 1, 1977

BX TOWER

PART NUMBER		WT.
8' BX Sections		
BX1A	Offset top section w/BXT1, BXR1, BXMK2	26
BXS1	Straight section	26
BX2	Standard offset section	23
BX2A	Offset top section w/BXT2, BXR2	26
BXS2	Straight section	24
BX3	Standard offset section	28
BX3A	Offset top section w/BXT3, BXR3	32
*BXS3	Straight section	29
BX4	Standard offset section	41
*BXS4	Straight section	42
BX5	Standard offset section	59
*BXS5	Straight section	60
BX6	Standard offset section	64
*BXS6	Straight section	65
BX7	Standard offset section	75
*BXS7	Straight section	77
BX8	Standard offset section	82
*BXS8	Straight section	84

Nuts and bolts included in section prices.

BX Accessories		
BXMK2	Mast hardware kit w/rotor post for top and rotor plate	2
FL	Heavy duty mast clamp	3½
EFBX	12' aluminum erection fixture for all BX sections	22
HBX	Head only for EFBX	12
P2545	Pole only for EFBX (or EF2545)	10
BXSM	Side mount (28" - 40") w/4', 1¼" OD mast (fits sections 1 thru 6 - recommend tower be guyed when using this mount)	16
WPBX	Work platform	14
BXSK1	Extra step kit for section 1	1
BXSK2	Extra step kit for section 2	1
BXSK3	Extra step kit for section 3	1

Top and Rotor Plates		
BXT1	Top plate for section BX1	1
BXT2	Top plate for section BX2	1½
BXT3	Top plate for section BX3	2
BXR1	Rotor plate for section 1	1
BXR2	Rotor plate for section 2	2
BXR3	Rotor plate for section 3	2

Masts		
M8	8' mast (1¼")	6½
M4	4' mast (1¼")	3

NOTE: When adding BXS1 or BXS2 sections to any BX tower, tower must be guyed. See #25 guy chart.

*Discontinued

F.O.B. FRANKFORT, INDIANA

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

PART NUMBER	WT.
*Self-Supporting Standard BX Tower with (M8) 8' mast	
BX24	84
BX32	125
BX40	184
BX48	248
BX56	323
BX64	405

PART NUMBER	WT.
*Self-Supporting Heavy Duty BX Tower	
HBX24	105
HBX32	164
HBX40	228
HBX48	303
HBX56	385

PART NUMBER	WT.
*Self-Supporting Extra Heavy Duty BX Tower	
HDBX24	142
HDBX32	206
HDBX40	281
HDBX48	363

Note: Concrete base stubs not included on above towers. Order all bases as a separate item.

PART NUMBER		WT.
4' Concrete Base Stubs (Set of 3) (Tower height not to exceed 64 ft.)		
BXB3	Stubs for section 3	14
BXB4	Stubs for section 4	17
BXB5	Stubs for section 5	18
BXB6	Stubs for section 6	22
BXB7	Stubs for section 7	25
BXB8	Stubs for section 8	27
Self-Supporting 4' Cylinder Base (For use without concrete with mounting hardware) (Tower height not to exceed 48 ft.)		
BXCA3	For use with section 3	75
BXCA4	For use with section 4	85
BXCA5	For use with section 5	95
BXCA6	For use with section 6	106
BXCHK	Cylinder base hardware kit (fits sections 3, 4, 5, & 6)	16
Self-Supporting Hinged Concrete Base for All Sections (Tower height not to exceed 64 ft.)		
BXHC36	Fits sections 3 thru 6	25
BXHC78	Fits sections 7 and 8	48
EX Series Bracketed Home TV BX Tower with Drive Rods, Base Plate, 8' Mast, and House Bracket		
EX2	16' tower	76
EX3	24' tower	99
EX4	32' tower	124
EX5	40' tower	148
EX Accessories		
EXR1	Universal roof mount	2
EXB1	Base plate	2
EXDR1	3' drive rods (set of 3)	8
M8	8' mast (1¼")	6½
EXH1	Adjustable house bracket - 4" to 18" (fits sections 1, 2, 3, 4, 5, & 6)	6
EXH2	Adjustable house bracket - 8" to 24" (fits sections 1, 2, 3, 4, 5, & 6)	7

*Note: The price on the above complete towers will be higher on shipments to the following states: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Alaska, Hawaii, and Alberta, B.C., and Sask., Canada.

Refer to alphabetical/numerical price list for current prices.

F.O.B. FRANKFORT, INDIANA

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SHEET D-1342
(Replaces Sheet Dated
January 1, 1977)

December 1, 1977

UNARCO-ROHN

MAST ASSEMBLY
BX - STANDARD // HBX - HEAVY DUTY // HDBX - EXTRA HEAVY DUTY TOWERS

1. Two U-bolt assemblies with "L" brackets are supplied for installating the mast. These "L" brackets are bolted through the slotted holes on the rotor and top plate with the short legs of the "L" bracket toward the outside of the tower. See Drawing C-750429.

2. Run the U-bolt through the open side of the formed "V" clamp and into the "L" bracket placing the 5/16" nuts and washers on the U-bolt loosely.

3. To install the mast, place one end of it through the upper U-bolt assembly end plate and slide it down into the lower U-bolt assembly. Then tighten the U-bolt assembly to hold the mast.

4. Adjustments to make the mast vertical may be made by moving the "L" brackets in the slotted holes.

The HBX - Heavy Duty and HDBX - Extra Heavy Duty Towers are furnished with a mast clamp installed on the top plate made from a pipe floor flange, which is provided with three bolts to be used as set screws to secure the mast. The box of hardware consists of one U-bolt assembly as described above and it can be installed on the lower plate as is instructed above, if required.

ASSEMBLY INSTRUCTIONS

BREAKING DOWN BUNDLE

1. Remove the 8' mast. If your tower includes the three 4' base stubs, remove them. Remove the package of nuts, bolts, and washers.

2. Lay the bundle on its side and remove the tower sections. Start with the innermost section of the package (smallest) section) and remove by pulling out with quick, firm jerks. It is not necessary nor desirable to pry tower sections out with tools as damage may result.

3. Inspect all tower sections on delivery to make sure there are no loose or broken rivets caused by transport mishandling. If a rivet is broken or loose, it should be replaced by a snug-fitting machine bolt and nut, securely tightened.

TOWER

After you have chosen the desired type of base for your tower (concrete base with BXB concrete base stubs, BXHC hinged concrete base, or BXCA cylinder base which hinges over and requires no concrete) and it is properly installed per base instructions, bolt the base section (largest section) to the base. Proceed with the erection as follows:

1. The legs on each higher section slide inside the previous one and should be positioned on the rivet stop in the previous leg. (This rivet stop is to prevent the tower section being installed from slipping through the previous section and is not for the purpose of aligning the assembly holes.) (Special Note: The BX8 section does not have a rivet stop in it, so extreme caution should be used when installing the BX7 section into the BX8 section.) Proceed by bolting together each section with the proper size bolts.

2. To erect the tower section by section vertically, you should use an EFBX erection fixture for raising and locating the section being installed into the previous section. By using BXHC or BXCA base the tower can be assembled on the ground and hinged up using extreme caution. When hinging up, watch for power lines, trees, etc.

3. Loose, missing or faulty rivets should be replaced with a similar size nut and bolt which can be obtained at any local hardware store.

NOTE: 3/8" bolts are to be used on BX1, BX2 and the top of BX3 sections. 9/16" bolts are used on the bottom of the BX3 and all sections from BX4 through BX8 (BX8 is the largest section).

One set of cross braces on one face of the top section is purposely left off to allow easy access to the rotor plate for installing the mast and rotor.

NOTES ON INSTALLING ROTATORS

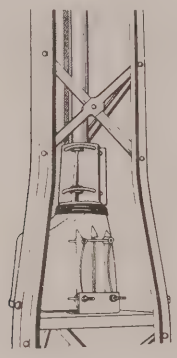
Most all makes of rotators can be installed on the rotor plate inside the top tower section of the BX standard towers. There is a short piece of tubing furnished with each tower that can be used as a thrust bearing (for 1-1/4" mast) with the mast clamp installed on the top plate as is described under the heading of Mast Assembly. Do not install rotators on the HDBX top plate.

For the HBX - Heavy Duty and HDBX - Extra Heavy Duty Towers, when a rotator is used a 4" piece of tubing or pipe with an I.D. larger than the O.D. of the mast can be installed in the pipe flange clamp and used as a bearing sleeve for the mast to turn in.

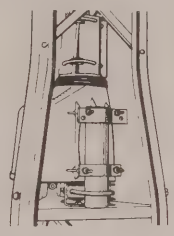
FOR INSTALLING THE ROTATOR ITSELF, FOLLOW THE PROCEDURES OUTLINED BELOW:

Some inline model rotators mount directly to the rotor plate. (The lower housing of the rotator is not used when this is done.) The necessary holes for mounting most rotors are pre-punched in the plate itself and the bolts furnished to bolt the lower housing to the upper housing (4-1/4" x 1" bolts) are to be inserted from the bottom of the plate upward and into the rotor. It is desirable to place 3/8" nuts to act as spacers between the rotor plate and the rotator. These nuts will prevent the terminals of the rotator and the rotor wire from shorting on the rotor plate. An 8" piece of tubing is furnished with each tower. It can be installed into the clamp ("V" clamp and "L" shaped brackets furnished for offset rotor installation only) for the offset type rotors. It is necessary to reverse the clamp assembly (to face outside of the tower), opposite that of installing a standard mast to the rotor plate. Some rotators can be mounted directly to the "L" shaped bracket as shown or to the 8' mast as described above.

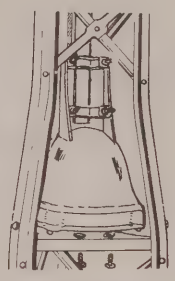
Also, some rotators mount beneath the rotor plate (as pictured). It will be necessary to increase the 1/4" holes in the rotor plate to 3/8" holes to use the 3/8" bolts furnished with these rotators. See pictorial views of typical rotor installations:



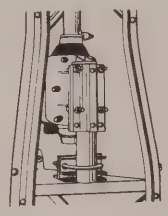
CROWN ROTOR



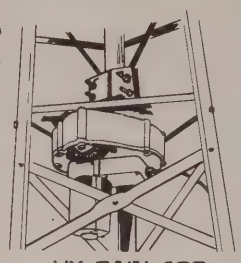
CROWN ROTOR



CDR "BELL" ROTOR



ALLIANCE ROTOR



HY-GAIN 400 ROTOR

In all cases be careful during installation.

EX SERIES TOWER

The EX Series Tower is made up from a basic package of one BX1A section and one BX2 section.

To make an EX3, EX4, or EX5 tower, straight sections in the BX1 (BXS1) and BX2 (BXS2) dimensions are interposed between the standard sections.

The part number indicates the number of 8' sections within that particular package. (Example: EX2 is two 8' sections of tower or 16' and an EX4 is four 8' sections of tower or 32'.) There is also furnished with each EX tower, one 8' x 1¼" mast pole, one base plate with three drive rods to be driven through the holes provided (approximately 4" of the drive rods should be left above the top of the plate). These rods prevent the base of the tower from shifting sideways only. Also furnished is one EXH1 adjustable house bracket. Do not attempt to climb tower until house bracket has been installed. Not more than 16' (two sections) of tower should be extended above the house bracket without necessitating guying.

Should it be desired to put this installation on a roof top, the EXR1 roof mount is available. This bracket is formed to to a peaked or hip roof; however, by straightening out the flanges of the bracket, it can be placed on a flat roof. After the roof mount is set, the standard base plate of the EX Series (EXB1) is bolted to the hinged part of the roof mount. The tower is then assembled as in other normal installations.

For roof installations, the tower should be guyed at least each 16' (no guy wire furnished). This is a protection to the roof, as well as the tower. When assemblying the tower, two legs should be started and the third leg slid into place with the aid of a screw driver as the two sections are of the same dimensions.

One cross brace on the BX1A top section is purposely left off to give easy access to the rotor plate for installing the mast or rotor. For mast and rotator instructions, follow instructions for BX Tower.

IMPORTANT NOTE: The following procedure should be observed on all bolts used to join sections. Insert bolt through hole provided in tower sections, place star washer and then run nut up securely. This method results in maximum strength.

****

NOTES FOR BX AND EX SERIES TOWERS . . .

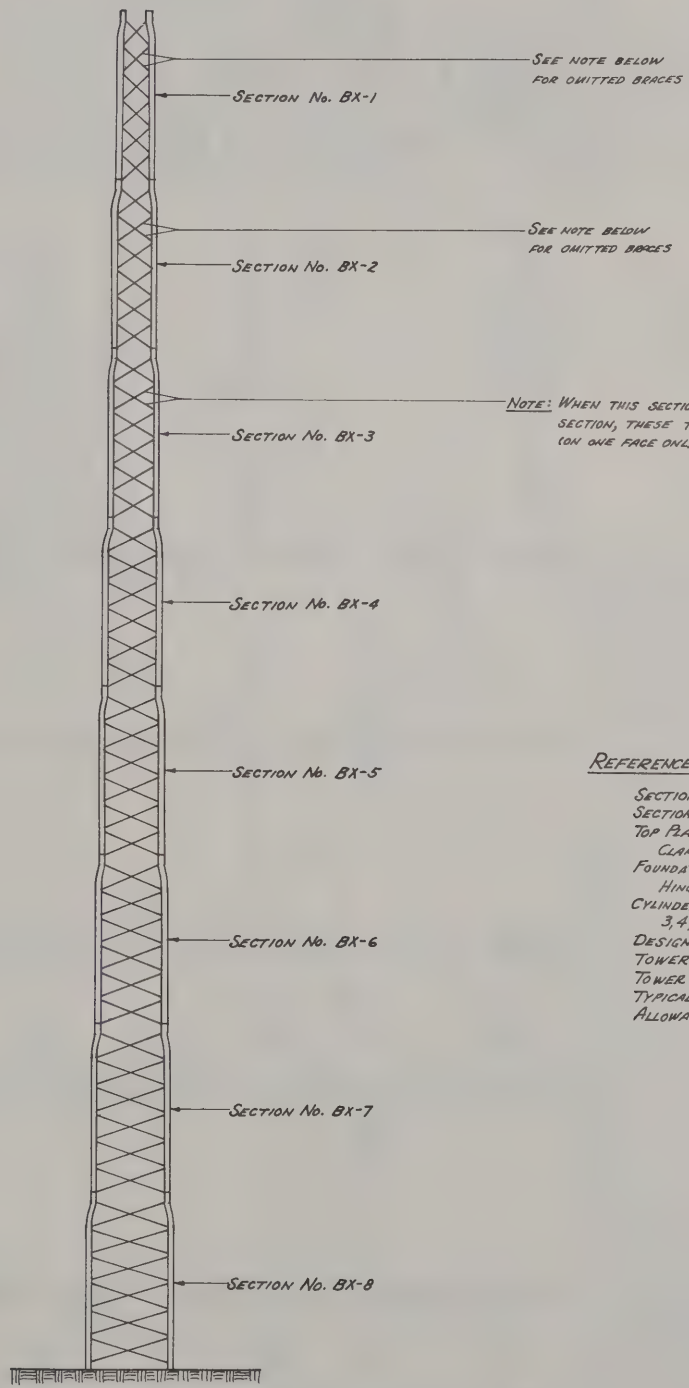
Do not install towers near power lines. All towers should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All antenna installations must be grounded per local or national codes.

All towers should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.


See note below for omitted braces
Section No. BX-1
See note below for omitted braces
Section No. BX-2
Note: When this section is used as the top section, these two braces are omitted (on one face only) to accomodate rotor.
Section No. BX-3
Section No. BX-4
Section No. BX-5
Section No. BX-6
Section No. BX-7
Section No. BX-8

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF ALLIED TUBE & CONDUIT

TITLE: BX SERIES TOWER
TYPICAL 64' TOWER (SECTIONS 1 THRU 8)

THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED OR USED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.

FILE NO.

SCALE	NONE	MATERIAL	FINISH
DRWN BY	AED	DATE 6-6-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CHKD BY	BH	DATE 2-2-76	TOLERANCES: DEC. ±, FRAC. ±, ANGLES ±
APP'D. ENGRG.	CWS	DATE 2-18-76	
APP'D. CUST.		DATE 2-19-76	

DWG. NO. C-750428

WT.

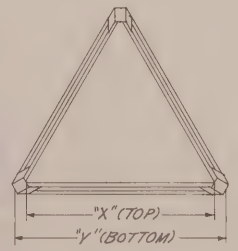
REFERENCE DRAWINGS:

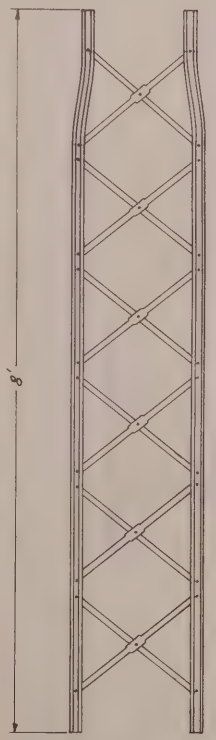
SECTION No.1 : DWG. No. C-750429.
SECTIONS 2 THRU 8 : DWG. No. C-750430.
TOP PLATE, ROTOR PLATE, & MAST CLAMPS : DWG. No. C-750429.
FOUNDATION & ANCHOR BOLT SETTING FOR HINGED CONCRETE BASE : DWG. No. C-760099.
CYLINDER BASE INSTALLATION FOR SECTIONS 3,4,5 & 6 : DWG. No. C-750409-R2.
DESIGN ASSUMPTIONS : DWG. No. A-750005.
TOWER SECTION PROPERTIES : DWG. No. B-760024.
TOWER DESIGN DATA : DWG. No. B-760025.
TYPICAL TOWER ANALYSIS : DWG. No. A-760000.
ALLOWABLE ANTENNA LOADS : DWG. No. A-760001.

PRINTED IN U.S.A.

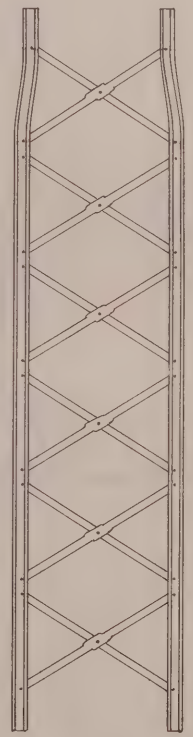
GAF 880-250 2-72 48194

NOTE: SEE DWG. NO. C-750429 FOR DETAILS OF TYPICAL TOP PLATE AND ROTOR PLATE FOR SECTIONS 2 AND 3.

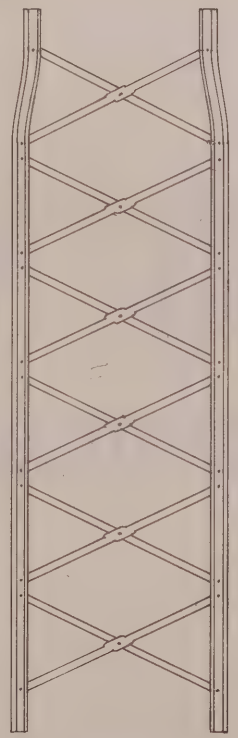




SECTIONS 2,3,4

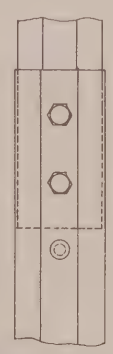


SECTIONS 5,6

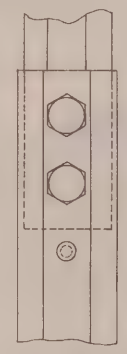


SECTIONS 7,8

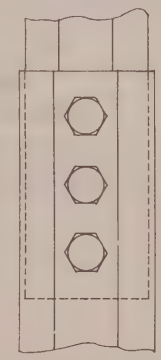
ELEVATIONS OF TYPICAL SECTIONS



TYPICAL LEG JOINT
BETWEEN
SECTIONS 1-2
SECTIONS 2-3



TYPICAL LEG JOINT
BETWEEN
SECTIONS 3-4
SECTIONS 4-5
SECTIONS 5-6
SECTIONS 6-7



TYPICAL LEG JOINT
BETWEEN
SECTIONS 7-8

SECTION No.	LEG JOINT BOLTS			"X" (TOP)	"Y" (BOTTOM)
	LOCATION	QTY.	SIZE		
BX-2	TOP	2	$\frac{3}{8} \times \frac{3}{4}$	$10\frac{7}{16}$	$12\frac{11}{16}$
	BOTTOM	2	$\frac{3}{8} \times \frac{3}{4}$		
BX-3	TOP	2	$\frac{3}{8} \times \frac{3}{4}$	$12\frac{13}{16}$	$15\frac{1}{16}$
	BOTTOM	2	$\frac{9}{16} \times 1$		
BX-4	TOP	2	$\frac{9}{16} \times 1$	$15\frac{3}{16}$	$17\frac{7}{16}$
	BOTTOM	2	$\frac{9}{16} \times 1$		
BX-5	TOP	2	$\frac{9}{16} \times 1$	$17\frac{5}{8}$	$20\frac{1}{8}$
	BOTTOM	2	$\frac{9}{16} \times 1$		
BX-6	TOP	2	$\frac{9}{16} \times 1$	$20\frac{5}{16}$	$22\frac{13}{16}$
	BOTTOM	2	$\frac{9}{16} \times 1$		
BX-7	TOP	2	$\frac{9}{16} \times 1$	23	$25\frac{1}{2}$
	BOTTOM	3	$\frac{9}{16} \times 1$		
BX-8	TOP	3	$\frac{9}{16} \times 1$	$25\frac{11}{16}$	$28\frac{7}{16}$
	BOTTOM	3	$\frac{9}{16} \times 1$		

NOTE: FOR STRAIGHT SECTIONS ELIMINATE "X" DIMENSION.

NO.	DESCRIPTION	DATE	BY
REVISIONS			

ROHN® MANUFACTURING
DIVISION OF GRADCO

TITLE
BX SERIES TOWER
(SECTIONS 2 THROUGH 8)

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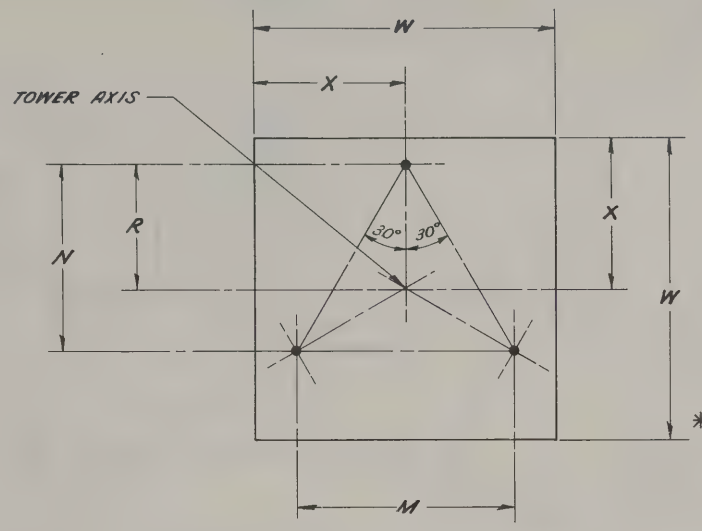
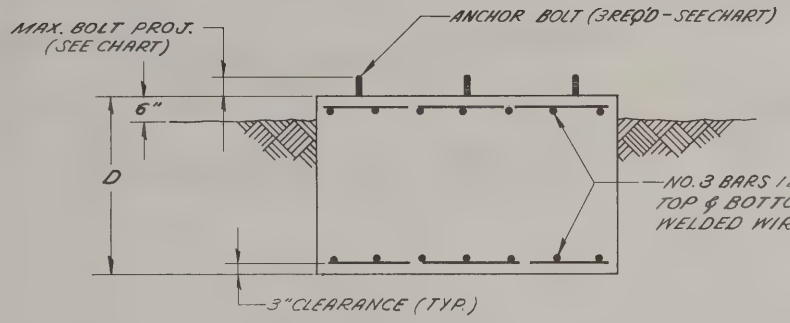
FILE NO.

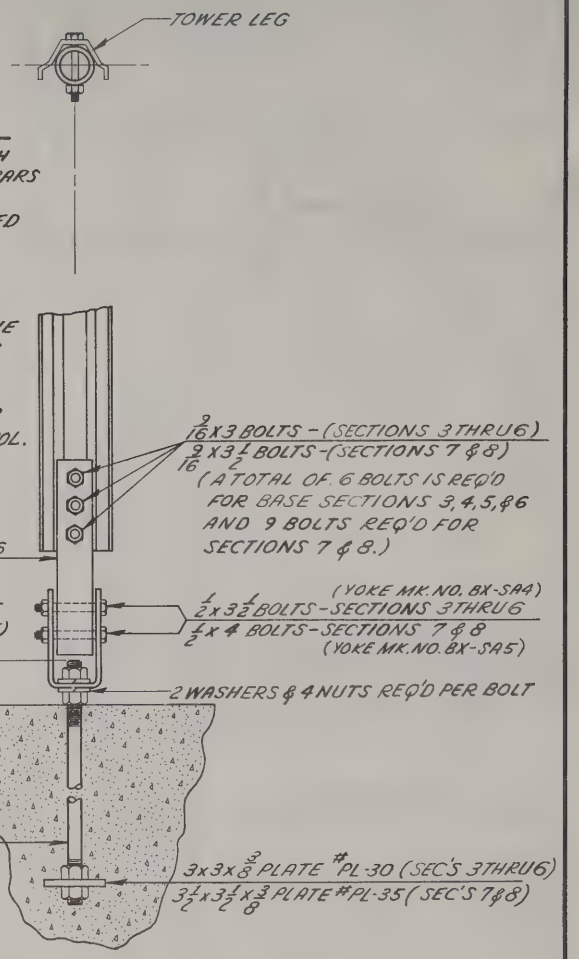
SCALE	NONE	MATERIAL		FINISH		WT.
DWN. BY	AED	DATE	6-6-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.		
CK'D. BY	DH	DATE	6-7-76	TOLERANCES		DWG. NO.
APP'D. ENG'RG	CW	DATE	6-17-76	DEC. ±	FRAC. ±	ANGLES ±	C-750430
APP'D. SALES	MBW	DATE	6-19-76			



FOUNDATION NOTES

1. CONCRETE, 3000 P.S.I. MIN. ULT. STRENGTH
2. ASTM A-615 GRADE 40 DEFORMED RE-BARS
3. ALL FORMS MUST BE REMOVED FROM CONCRETE BEFORE PLACING COMPACTED BACKFILL.
4. FOUNDATIONS DESIGNED FOR 2000 PSF SOIL.
5. IT IS RECOMMENDED THAT A WOOD TEMPLATE BE CONSTRUCTED BY THE USER FOR HOLDING ANCHOR BOLTS AT THE PROPER DIM'S WHILE CONC. IS BEING POURED.
- *6. REINFORCING IS RECOMMENDED FOR TEMPERATURE & SHRINKAGE CONTROL.


MAX. BOLT PROJ. (SEE CHART)
ANCHOR BOLT (3 REQ'D - SEE CHART)
6"
D
NO. 3 BARS 12" O.C. EACH WAY TOP & BOTTOM OR 6x6 3/6 WELDED WIRE FABRIC *
3" CLEARANCE (TYP.)


TOWER LEG
1 1/2" PIPE (BX-SAR, BX-SAL, BX-SAC) - SEC'S 3 THRU 6
2" PIPE (BX-LAR, BX-LAL, BX-LAC) - SEC'S 7 & 8
MAX. PROJ. (SEE CHART)
3/16 x 3 BOLTS - (SECTIONS 3 THRU 6)
3/16 x 3 1/2 BOLTS - (SECTIONS 7 & 8)
(A TOTAL OF 6 BOLTS IS REQ'D FOR BASE SECTIONS 3, 4, 5, & 6 AND 9 BOLTS REQ'D FOR SECTIONS 7 & 8.)
(YOKE MK. NO. BX-SA4)
1/2 x 3 1/2 BOLTS - SECTIONS 3 THRU 6
1/2 x 4 BOLTS - SECTIONS 7 & 8
(YOKE MK. NO. BX-SA5)
2 WASHERS & 4 NUTS REQ'D PER BOLT
3/4 x 20 ANCHOR BOLT - SEC'S 3 THRU 6
1 x 30 ANCHOR BOLT - SEC'S 7 & 8
3 x 3 x 3/8 PLATE # PL-30 (SEC'S 3 THRU 6)
3 1/2 x 3 1/2 x 3/8 PLATE # PL-35 (SEC'S 7 & 8)

3 FT. THICK PAD FOUNDATION

SEC. NO.	M	N	R	MAX. PROJ.	ANCHOR BOLT	BEARING PL	D	W	X	CU. YDS. CONC.
3	13 5/16"	11 1/2"	7 11/16"	2 5/8"	3-3/4 x 20"	PL-30	3'-0"	3'-9	1'-10 1/2	1.6
4	15 11/16"	13 9/16"	9 1/16"	2 5/8"	3-3/4 x 20"	PL-30	3'-0"	4'-3	2'-1 1/2	2.0
5	18 5/16"	15 7/8"	10 9/16"	2 5/8"	3-3/4 x 20"	PL-30	3'-0"	4'-9	2'-4 1/2	2.5
6	21"	18 3/16"	12 1/8"	2 5/8"	3-3/4 x 20"	PL-30	3'-0"	5'-3	2'-7 1/2	3.1
7	23 1/4"	20 1/8"	13 7/16"	3 1/4"	3-1 x 30"	PL-35	3'-0"	6'-0	3'-0	4.0
8	26 3/16"	22 11/16"	15 1/8"	3 1/4"	3-1 x 30"	PL-35	3'-0"	6'-6	3'-3	4.7

4 FT. THICK PAD FOUNDATION

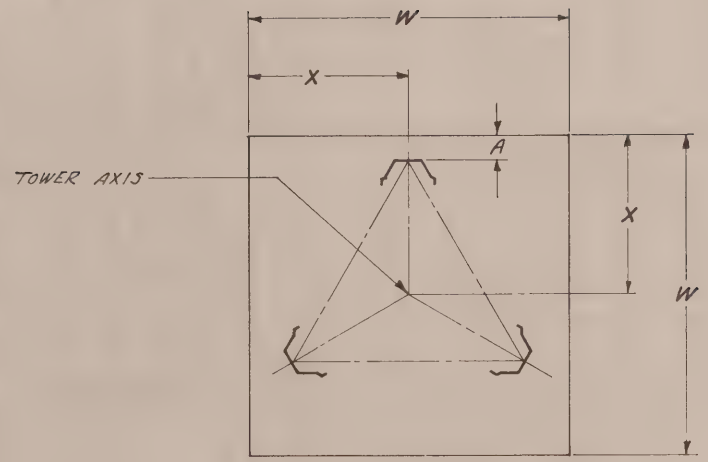
SEC. NO.	M	N	R	MAX. PROJ.	ANCHOR BOLT	BEARING PL	D	W	X	CU. YDS. CONC.
3	13 5/16"	11 1/2"	7 11/16"	2 5/8"	3-3/4 x 20"	PL-30	4'-0"	3'-6	1'-9	1.8
4	15 11/16"	13 9/16"	9 1/16"	2 5/8"	3-3/4 x 20"	PL-30	4'-0"	4'-0	2'-0	2.4
5	18 5/16"	15 7/8"	10 9/16"	2 5/8"	3-3/4 x 20"	PL-30	4'-0"	4'-6	2'-3	3.0
6	21"	18 3/16"	12 1/8"	2 5/8"	3-3/4 x 20"	PL-30	4'-0"	4'-9	2'-4 1/2	3.4
7	23 1/4"	20 1/8"	13 7/16"	3 1/4"	3-1 x 30"	PL-35	4'-0"	5'-3	2'-7 1/2	4.1
8	26 3/16"	22 11/16"	15 1/8"	3 1/4"	3-1 x 30"	PL-35	4'-0"	5'-9	2'-10 1/2	4.9

No. ▲	Revision Description	▲ Date	▲ By
R1	ADDED YOKE MK. NO'S & REVISED PIPE MK. NO'S	4-8-76	O.H.

Unarco-Rohn
Division of Unarco Industries, Inc.

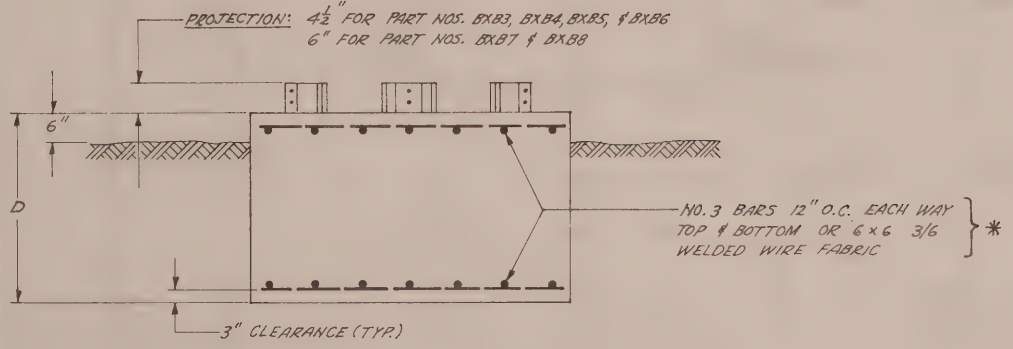
Title: FOUNDATION & ANCHOR BOLT DETAILS for MODEL BX TOWER

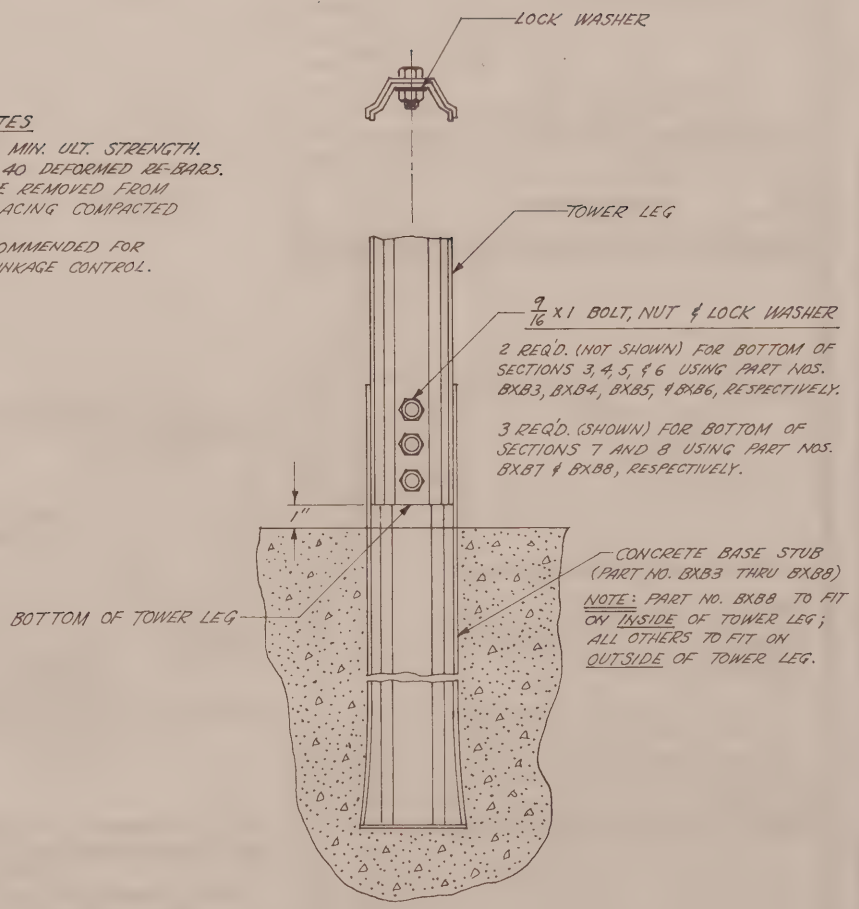
Scale: NONE		Unless otherwise specified, dimensions are given in inches. Tolerances	
Drawn by: O.H.	Date: 1-30-76	Decimals: ±	Fractions: ±
Checked by: AED	Date: 2-3-76	Angles: ±	Material
Approved by Engineering: CW	Date: 2-3-76	Finish	Weight
Approved by Production	Date	This drawing is the property of Unarco-Rohn. It is not to be reproduced, copied or traced in whole or in part without our written consent.	
Approved by Sales: RAK	Date: 2-19-76	File Number	Drawing Number: C-760099 R1



FOUNDATION NOTES

1. CONCRETE, 3000 PSI MIN. ULT. STRENGTH.
2. ASTM A-615 GRADE 40 DEFORMED RE-BARS.
3. ALL FORMS MUST BE REMOVED FROM CONCRETE BEFORE PLACING COMPACTED BACKFILL.
* 4. REINFORCING IS RECOMMENDED FOR TEMPERATURE & SHRINKAGE CONTROL.


PROJECTION: 4½" FOR PART NOS. BXB3, BXB4, BXB5, & BXB6
6" FOR PART NOS. BXB7 & BXB8
6"
D
NO. 3 BARS 12" O.C. EACH WAY
TOP & BOTTOM OR 6 x 6 3/6
WELDED WIRE FABRIC
*
3" CLEARANCE (TYP.)


LOCK WASHER
TOWER LEG
9/16 X 1 BOLT, NUT & LOCK WASHER
2 REQ'D. (NOT SHOWN) FOR BOTTOM OF SECTIONS 3, 4, 5, & 6 USING PART NOS. BXB3, BXB4, BXB5, & BXB6, RESPECTIVELY.
3 REQ'D. (SHOWN) FOR BOTTOM OF SECTIONS 7 AND 8 USING PART NOS. BXB7 & BXB8, RESPECTIVELY.
1"
CONCRETE BASE STUB (PART NO. BXB3 THRU BXB8)
NOTE: PART NO. BXB8 TO FIT ON INSIDE OF TOWER LEG; ALL OTHERS TO FIT ON OUTSIDE OF TOWER LEG.
BOTTOM OF TOWER LEG

FOUNDATION PAD

SECT. NO.	W	X	D	CU. YDS. CONCR.	A
3	3'-6"	1'-9"	4'-0"	1.8	1'-0¼"
4	4'-0"	2'-0"	4'-0"	2.4	1'-2"
5	4'-6"	2'-3"	4'-0"	3.0	1'-3½"
6	4'-9"	2'-4½"	4'-0"	3.4	1'-3½"
7	5'-3"	2'-7½"	4'-0"	4.1	1'-4¾"
8	5'-9"	2'-10½"	4'-0"	4.9	1'-6"

No. ▲	Revision Description	▲Date	▲By

Unarco-Rohn
Division of Unarco Industries, Inc

Title
FOUNDATION FOR CONCRETE BASE STUBS FOR BX TOWER

Scale: NONE
Drawn by: AED — Date: 4-5-78
Checked by: OK — Date: 5-24-78
Approved by Engineering: CW — Date: 5.24.78
Approved by Production — Date:
Approved by Sales: RAL — Date: 5.24.78

Unless otherwise specified, dimensions are given in inches
Tolerances
Decimals ± | Fractions ± | Angles ±
Material | Finish | Weight

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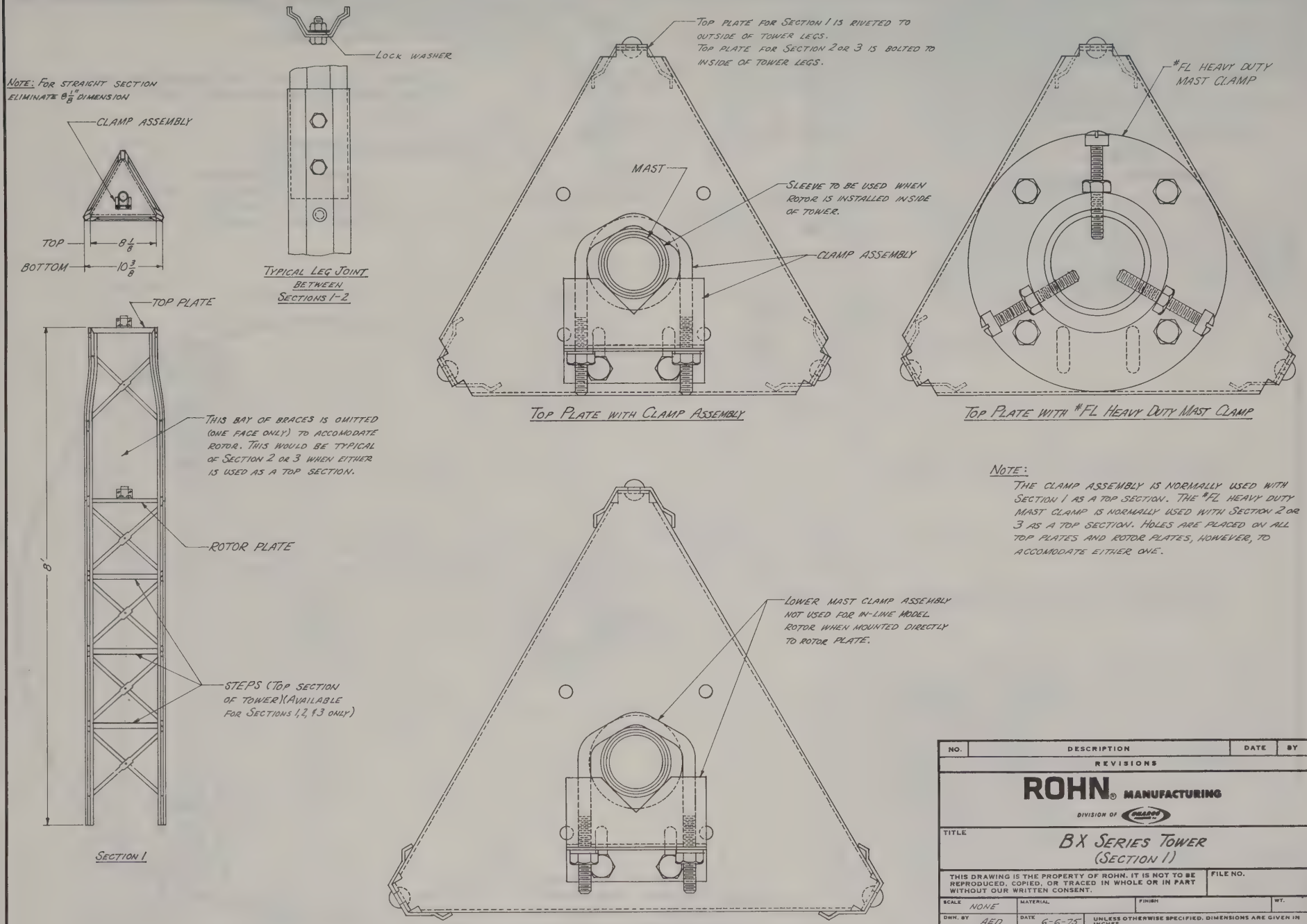
File Number

Drawing Number: C780284


Note: For straight section eliminate 8 1/8 dimension
CLAMP ASSEMBLY
TOP
8 1/8
BOTTOM
10 3/8
Lock Washer
Typical Leg Joint Between Sections 1-2
TOP PLATE
8'
THIS BAY OF BRACES IS OMITTED (ONE FACE ONLY) TO ACCOMODATE ROTOR. THIS WOULD BE TYPICAL OF SECTION 2 OR 3 WHEN EITHER IS USED AS A TOP SECTION.
ROTOR PLATE
STEPS (TOP SECTION OF TOWER) (AVAILABLE FOR SECTIONS 1, 2, & 3 ONLY)
Section 1
Top plate for Section 1 is riveted to outside of tower legs.
Top plate for Section 2 or 3 is bolted to inside of tower legs.
MAST
SLEEVE TO BE USED WHEN ROTOR IS INSTALLED INSIDE OF TOWER.
CLAMP ASSEMBLY
Top Plate with Clamp Assembly
#FL HEAVY DUTY MAST CLAMP
Top Plate with #FL Heavy Duty Mast Clamp
LOWER MAST CLAMP ASSEMBLY NOT USED FOR IN-LINE MODEL ROTOR WHEN MOUNTED DIRECTLY TO ROTOR PLATE.
Rotor Plate with Clamp Assembly

Note:
The clamp assembly is normally used with Section 1 as a top section. The #FL heavy duty mast clamp is normally used with Section 2 or 3 as a top section. Holes are placed on all top plates and rotor plates, however, to accomodate either one.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF GRANCO

TITLE
BX Series Tower
(Section 1)

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FILE NO.

SCALE: NONE	MATERIAL:	FINISH:	WT.
DWN. BY: AED	DATE: 6-6-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY: DS	DATE: 2-5-76		
APP'D. ENGRG.: CW	DATE: 2-17-76	TOLERANCES: DEC. ± FRAC. ± ANGLES ±	DWG. NO. C-750429
APP'D. SALES: [signature]	DATE: 2-19-76		

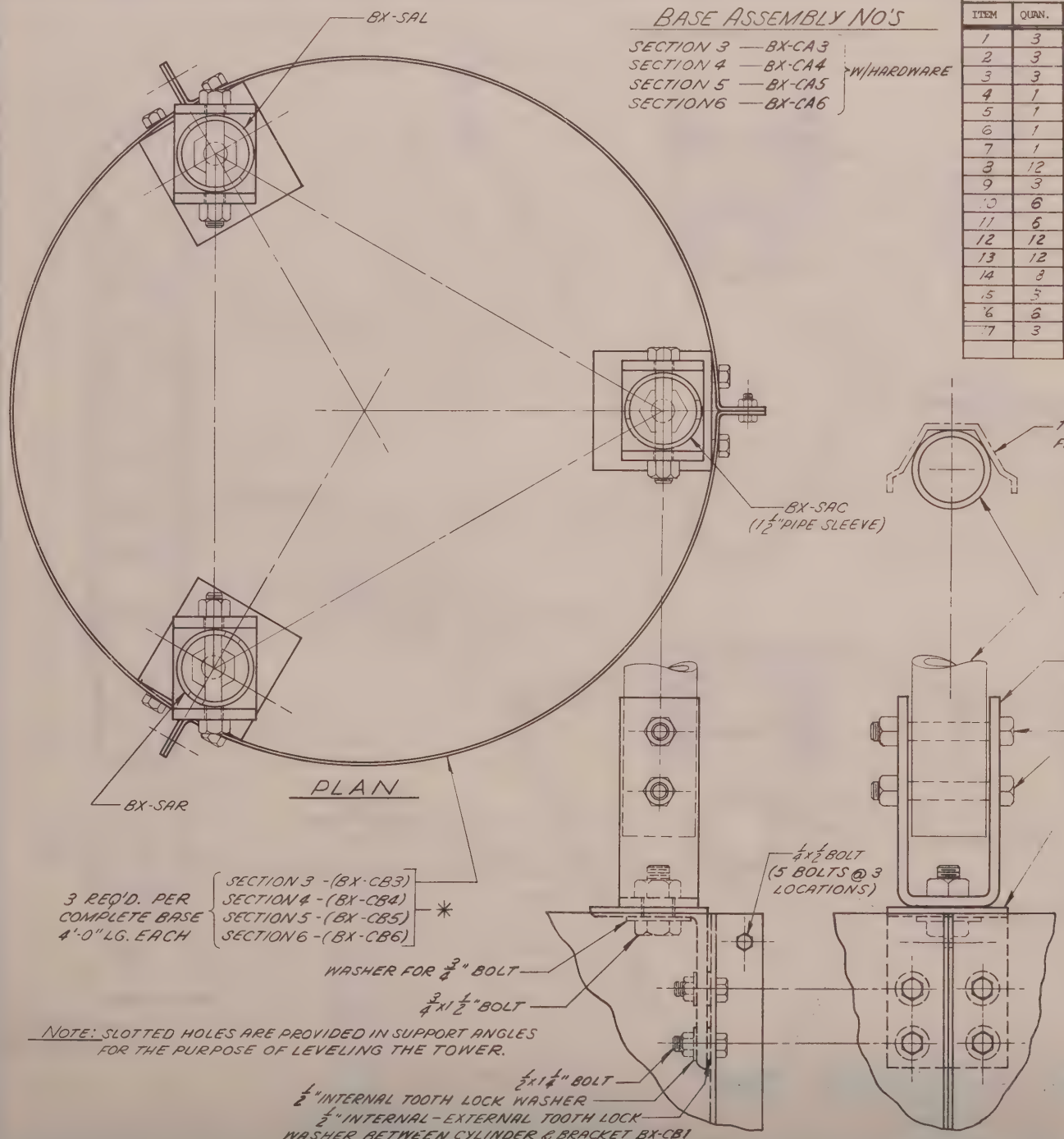
GAF 880-250 2-72 48194
PRINTED IN U.S.A.

BASE ASSEMBLY NO'S

SECTION 3 — BX-CA3
SECTION 4 — BX-CA4
SECTION 5 — BX-CA5
SECTION 6 — BX-CA6
} W/HARDWARE

BILL OF MATERIAL

ITEM	QUAN.	MARK NO.	DESCRIPTION	DWG. NO.
1	3	*	CYLINDER SEC. 4'LG. (SEE DWG. PLAN)	C-750410
2	3	BX-CB1	ANGLE SUPPORT BRACKET	C-750410
3	3	BX-SA4	ATTACHMENT YOKE	C-750376
4	1	BX-SAC	CENTER SLEEVE (1 1/2" PIPE)	C-750376
5	1	BX-SAR	RIGHT SIDE SLEEVE (1 1/2" PIPE)	C-750376
6	1	BX-SAL	LEFT SIDE SLEEVE (1 1/2" PIPE)	C-750376
7	1	220074	1/4 x 1/2 BOLT KIT, ZP (15/KIT)	
8	12	2100176	1/2 x 1 1/4 BOLT	
9	3	2100456	3/4 x 1 1/2 BOLT	
10	6	2100256	1/2 x 3 1/2 BOLT	
11	6	220081	9/16 x 3 BOLT, ZP	
12	12	250023	1/2 INTERNAL TOOTH LOCK WASHER	
13	12	250024	1/2 INT. - EXT. TOOTH LOCK WASHER	
14	8	230013	1/2 NUT	
15	3	230020	3/4 NUT	
16	6	240027	9/16 NUT, ZP	
17	3	250017G	3/4 WASHER	


BX-SAL
BX-SAC (1 1/2" PIPE SLEEVE)
BX-SAR
PLAN
TOWER LEG (2-9/16 X 3 LG. BOLTS REQ'D. FOR FASTENING 1 1/2" PIPE TO BASE SECTION LEG)
1 1/2" PIPE SLEEVE TO BE BOLTED ON INSIDE OF BASE SECTION LEGS
BX-SA4 ATTACHMENT YOKE
1/2 x 3 1/2" BOLTS REQ'D
SUPPORT BRACKET BX-CB1
1/4 x 1/2 BOLT (5 BOLTS @ 3 LOCATIONS)
3 REQ'D. PER COMPLETE BASE 4'-0" LG. EACH
SECTION 3 -(BX-CB3)
SECTION 4 -(BX-CB4)
SECTION 5 -(BX-CB5)
SECTION 6 -(BX-CB6)
*
WASHER FOR 3/4" BOLT
3/4 x 1 1/2" BOLT
1/2 x 1 1/4" BOLT
1/2" INTERNAL TOOTH LOCK WASHER
1/2" INTERNAL - EXTERNAL TOOTH LOCK WASHER BETWEEN CYLINDER & BRACKET BX-CB1

NOTE: SLOTTED HOLES ARE PROVIDED IN SUPPORT ANGLES FOR THE PURPOSE OF LEVELING THE TOWER.

NO.	DESCRIPTION	DATE	BY
R4	CHANGED BILL OF MATERIAL & ADDED MK. NOS. (PART NOS.)	1-5-78	AED
R3	REVISED ASSEMBLY NO'S.	2-12-76	OH
R2	ADDED ITEM NO. 11 IN PARTS LIST	2-1-76	OH
R1	REVISED BOLT SIZES & LENGTH	1-21-76	OH

REVISIONS

ROHN® MANUFACTURING
DIVISION OF GRADY CORP.

TITLE: CYLINDER BASE INSTALLATION for MODEL BX TOWER SECTIONS 3,4,5, & 6

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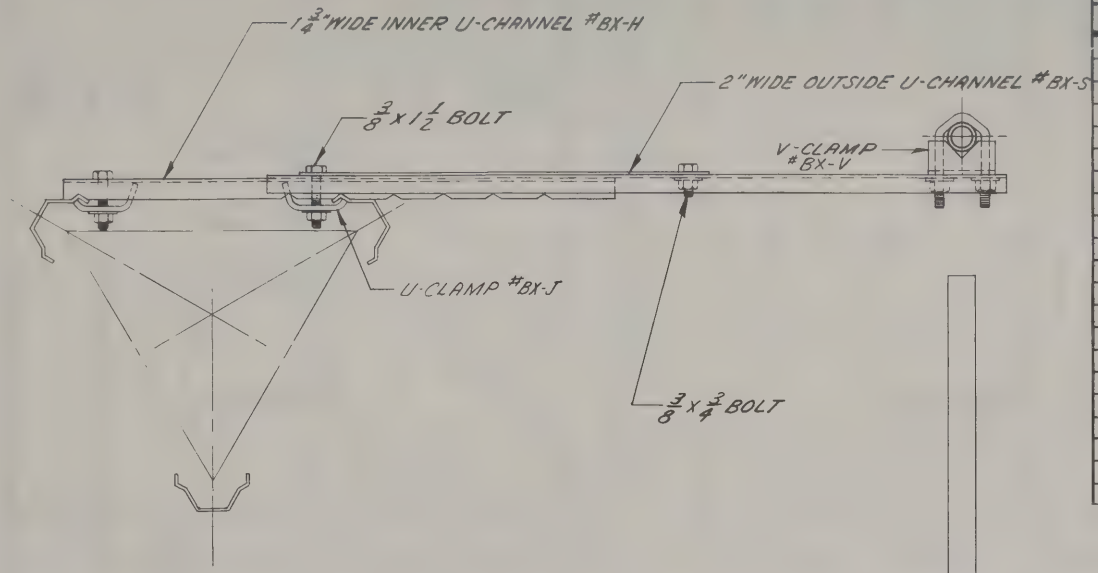
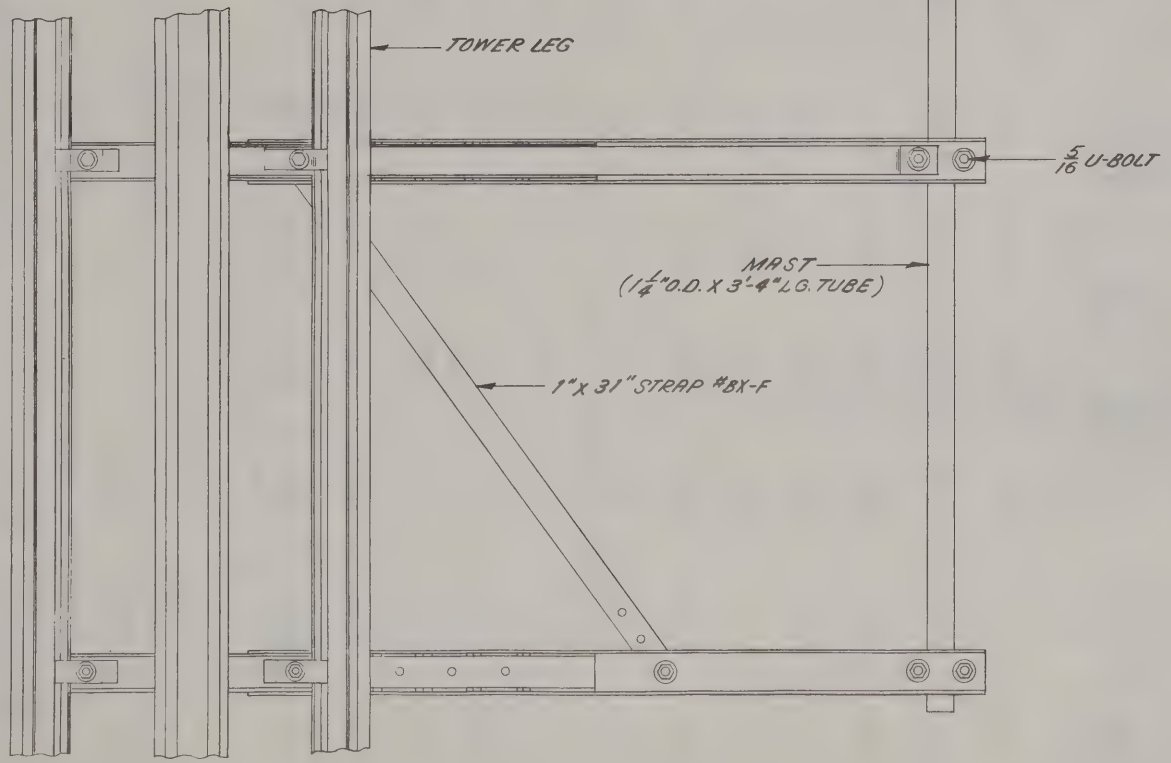
FILE NO.

SCALE ~	MATERIAL	FINISH	WT.
DWN. BY O.H	DATE 6-4-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY AED	DATE 6-17-75	TOLERANCES DEC. ± FRAC. ± ANGLES ±	DWG. NO. C-750409 R4
APP'D. ENGRG. CW	DATE 1-27-76		
APP'D. SALES	DATE 2-19-76		

PRINTED IN U.S.A.





BILL OF MATERIAL

ITEM	QUAN.	PART NO.	DESCRIPTION	DWG. NO.
1	2	BX-S	2" WIDE OUTSIDE CHANNEL	C-76020N-R1
2	2	BX-H	1¾" WIDE INNER CHANNEL	C-76020N-R1
3	4	BX-J	U-CLAMP	C-76023B
4	1	BX-F	1" x 31" STRAP	C-76023B
5	1	4904000 10 PHP	1¼" O.D. x 18 GA. TUBE 3'-4" LONG	
6	4	220086	⅜" x 1½" BOLT	
7	5	240021	⅜" NUT	
8	1	220069	⅜" x ¾" BOLT	
9	5	250025	⅜" WASHER	
10	2	270034	5/16" U-BOLT	
11	4	240014	5/16" NUT	
12	4	250029	5/16" WASHER	
13	2	BX-V	V-CLAMP	

NOTE: WASHERS SUPPLIED FOR ALL BOLTS.

R2 ADDED BILL OF MAT'RL.; DELETED BACK BRACE 2-23-77 AED
R1 ADDED PART NO'S. 1-27-77 OH

No.	Revision Description	Date	By

Unarco-Rohn
Division of Unarco Industries, Inc.

Title: BX-SM MOUNT ASSEMBLY

Scale ~

Unless otherwise specified, dimensions are given in inches
Tolerances

	Decimals	Fractions	Angles
	±	±	±

Drawn by O.H. Date 10-9-75
Checked by WRM Date 10-10-75
Approved by Engineering CWJ Date 10-10-75
Approved by Production Date
Approved by Sales RAL Date 3-30-77

Material | Finish | Weight

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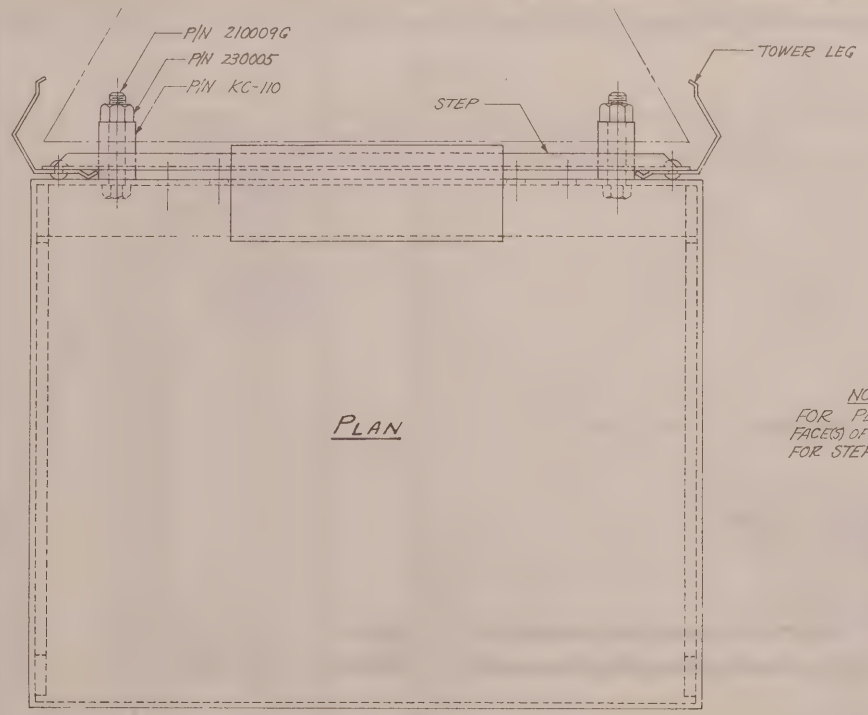
File Number

Drawing Number C-750946 R2



PLAN

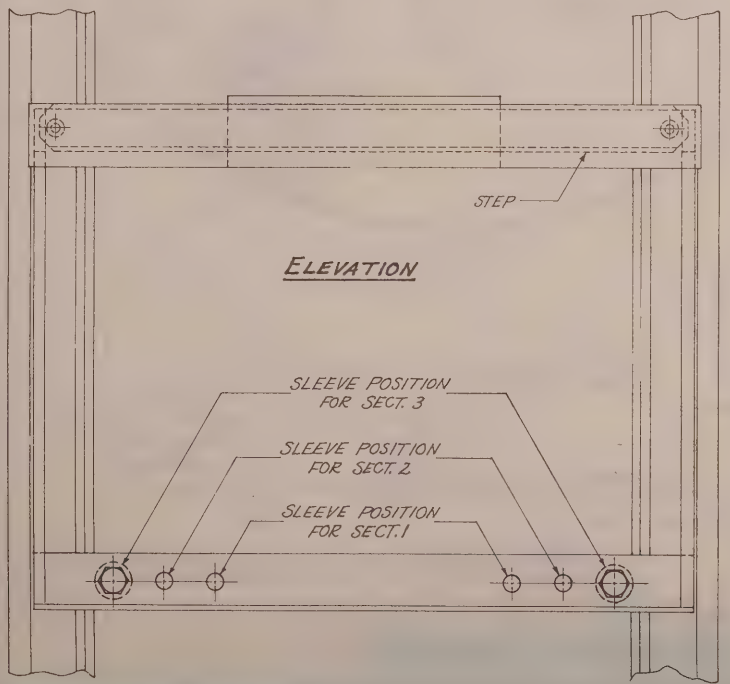
NOTE: STEP KITS ARE AVAILABLE FOR PLACEMENT OF STEPS ON OTHER FACE(S) OF TOWER. (SEE BILL OF MATERIAL FOR STEP KITS AT RIGHT).

BILL OF MATERIAL (WORK PLATFORM)

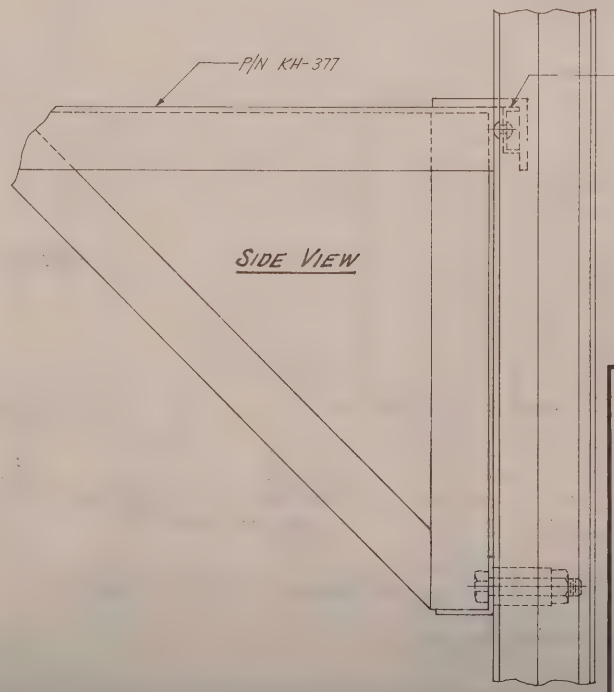
ITEM	QUAN.	PART NO.	DESCRIPTION	DWG. NO.
PART NO. WP-BX (WORK PLATFORM) HAS THE FOLLOWING COMPONENTS:				
1	2	210009G	$\frac{3}{8}$ x 2 BOLT	
2	2	230005	$\frac{3}{8}$ NUT	
3	2	KC-110	TS $\frac{13}{16}$ O.D. x .187 ($1\frac{1}{4}$" LONG)	C-750089
4	1	KH-377	PLATFORM	C-770237

BILL OF MATERIAL (STEP KITS)(OPTIONAL)

ITEM	QUAN.	PART NO.	DESCRIPTION	DWG. NO.
PART NO. BX-SK1 (STEP KIT FOR SECT. 1) HAS THE FOLLOWING COMPONENTS:				
	6	220090	NO.8 x $\frac{11}{16}$ RD. HD. MACHINE SCREW	
	6	240033	NO.8 NUT	
	3	BX1S	STEP	B-751153 R1
PART NO. BX-SK2 (STEP KIT FOR SECT. 2) HAS THE FOLLOWING COMPONENTS:				
	6	220090	NO.8 x $\frac{11}{16}$ RD. HD. MACHINE SCREW	
	6	240033	NO.8 NUT	
	3	BX2S	STEP	B-751153 R1
PART NO. BX-SK3 (STEP KIT FOR SECT. 3) HAS THE FOLLOWING COMPONENTS:				
	6	220090	NO.8 x $\frac{11}{16}$ RD. HD. MACHINE SCREW	
	6	240033	NO.8 NUT	
	3	BX3S	STEP	B-751153 R1



ELEVATION



SIDE VIEW

No. ▲	Revision Description	▲Date	▲By

Unarco-Rohn
Division of Unarco Industries, Inc.

Title
WORK PLATFORM FOR BX TOWER

Scale: NONE		Unless otherwise specified, dimensions are given in inches
Drawn by: AED	Date: 4-5-77	Tolerances: Decimals ± Fractions ± Angles ±
Checked by: DWR	Date: 4-19-77	Material / Finish / Weight
Approved by Engineering: CWJ	Date: 5-9-77	
Approved by Production	Date	
Approved by Sales: RAA	Date: 6-16-77	

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File Number

Drawing Number: C-770238

TYPICAL TOWER ANALYSIS

TOWER DESIGN DATA: MODEL BX-64
WIND PRESSURE —— 20 PSF
ANTENNA LOAD — 6 SQ. FT. AT 3 FT. ABOVE TOWER TOP - $\frac{1}{2}$ IN. LINE
ANTENNA WT. = 50 LBS.
LINE WT. = 0.5 LBS./FT.

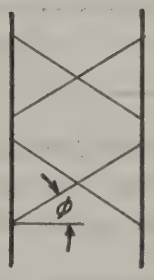
NOTE: ANTENNAS DEVELOPING A LARGE TWISTING MOMENT DUE TO WIND MUST NOT BE USED ON THIS TOWER. ANTENNAS SHOULD BE LIMITED TO THOSE HAVING A MAXIMUM BOOM LENGTH OF 10 FT.

SECTION NO.	8	7	6	5	4	3	2	1
DISTANCE FROM TOP (FT.)	61.7	53.7	46.0	38.3	30.7	23.0	15.3	7.7
WIND ON SECTION (LBS.)	179.7	161.7	150.0	139.5	115.5	107.7	101.1	96.0
WIND ON ANTENNA & LINE (LBS.)	5.5	5.3	5.3	5.3	5.3	5.3	5.3	127.4
TOTAL WIND ON SECTION (LBS.)	185.2	167.0	155.3	144.8	120.8	113.0	106.4	223.4
SHEAR (LBS.)	1215.9	1030.7	863.7	708.4	563.6	442.8	329.8	223.4
MOMENT (FT.-LBS.)	37,770	28,790	21,530	15,500	10,620	6770	3810	1690
FACE WIDTH (FT.)	2.284	2.047	1.824	1.602	1.381	1.184	.989	.794
.866 × FACE WIDTH (FT.)	1.978	1.773	1.580	1.388	1.196	1.025	.856	.688
LEG LOAD (LBS.) ①	19,100	16,240	13,630	11,170	8880	6600	4450	2460
SECTION WEIGHT (LBS.)	82	75	64	59	41	28	23	22
TOTAL WEIGHT (LBS.)	476	390	312	244	181	136	104	77
*LEG LOAD WITH WEIGHT (LBS.)	19,260	16,370	13,730	11,250	8940	6650	4490	2480
SHEAR ONE FACE (LBS.) ②	815	691	579	475	378	297	221	150
COS ϕ	.904	.883	.858	.827	.783	.733	.667	.580
*LOAD EACH BRACE (LBS.) ③	451	391	337	287	241	203	166	129

① LEG LOAD = $\frac{\text{MOMENT}}{.866 \times \text{FACE WIDTH}}$

② SHEAR ONE FACE = .67 × SHEAR

③ LOAD EACH BRACE = $\frac{\text{SHEAR ONE FACE}}{2 \times \cos \phi}$



* REFER TO DWG. NO. B-760025 FOR ALLOWABLE LOADS OF MEMBERS & CONNECTIONS.

DWG. NO. A-760000

Model BX Tower

Allowable Antenna Loads *

Wind Pressure = 20 psf (70.7 mph)

Nominal Height, Ft.	Combination of Tower Sections	Catalog No.	Area, Sq. Ft.	Thrust, Lbs.
24	BX-1-2-3	BX-24	6	120
	BX-2-3-4	HBX-24	12	240
	BX-3-4-5	HDBX-24	20	400
32	BX-1-2-3-4	BX-32	6	120
	BX-2-3-4-5	HBX-32	12	240
	BX-3-4-5-6	HDBX-32	18	360
40	BX-1-2-3-4-5	BX-40	6	120
	BX-2-3-4-5-6	HBX-40	10	200
	BX-3-4-5-6-7	HDBX-40	18	360
48	BX-1-2-3-4-5-6	BX-48	6	120
	BX-2-3-4-5-6-7	HBX-48	10	200
	BX-3-4-5-6-7-8	HDBX-48	18	360
56	BX-1-2-3-4-5-6-7	BX-56	6	120
	BX-2-3-4-5-6-7-8	HBX-56	10	200
64	BX-1-2-3-4-5-6-7-8	BX-64	6	120

* This load can be applied at a point 3 ft. above the apex of the tower in addition to the given wind pressure acting on the tower.

Note: Antenna types should be limited to those having a maximum boom length of 10 ft.

Dwg. No. A-760001

PARTS LIST P-285
(Replaces P-283)

September 1, 1977

B X T O W E R

TOWERS AS PACKAGED FOR SHIPPING																						OPTIONAL ACCESSORIES																											
TOWER MODEL		BX-1A	BXS-1	BX-2	BX-2A	BXS-2	BX-3	BX-3A	BX-4	BX-5	BX-6	BX-7	BX-8	FL	M-8	EX-B1	EXDR-1	EX-H1	EX-H2	BXB-3	BXB-4	BXB-5	BXB-6	BXB-7	BXB-8	BX-CA3	BX-CA4	BX-CA5	BX-CA6	BX-CHK*	BX-HC-36	BX-HC-78	BX-SM	EX-R1	EF-BX
BX	24	x		x			x								x					-						-				-	-		-		-
	32	x		x			x		x						x						-						-			-	-		-		-
	40	x		x			x		x	x					x							-					-			-	-		-		-
	48	x		x			x		x	x	x				x								-					-		-	-		-		-
	56	x		x			x		x	x	x	x			x									-						-	-	-	-		-
	64	x		x			x		x	x	x	x	x		x										-					-	-	-	-		-
HBX	24				x		x		x					x							-									-			-		-
	32				x		x		x	x				x								-								-			-		-
	40				x		x		x	x	x			x									-							-			-		-
	48				x		x		x	x	x	x		x										-							-	-	-		-
	56				x		x		x	x	x	x	x	x											-							-	-	-		-
HDBX	24							x	x	x				x								-								-			-		-
	32							x	x	x	x			x									-								-			-		-
	40							x	x	x	x	x		x										-								-	-	-		-
	48							x	x	x	x	x	x	x											-								-	-	-		-
EX	2	x		x											x	x	x	x																-	-	
	3	x	x	x											x	x	x	x																-	-	
	4	x	x	x		x									x	x	x		x															-	-	
	5	x	x	x		xx									x	x	x		x															-	-	

*Supplied with all Cylinder Bases

NOTE: Be sure you select type of base and ORDER SEPARATELY for BX, HBX, and HDBX Towers.
For EX Tower your base is included, unless you desire Roof Mount which must be ordered separately.

CAUTION ..... AX hardware is not interchangeable with BX hardware.

MODEL BX TOWER DESIGN ASSUMPTIONS

TOWER MATERIAL SPECIFICATIONS:

LEGS: ASTM A-446 GRADE C STEEL (MINIMUM YIELD POINT - 45,000 PSI)
(GALVANIZED ACCORDING TO ASTM A-525)

BRACES: COLD ROLLED C-1017 STEEL (MINIMUM YIELD POINT - 36,000 PSI)
(GALVANIZED ACCORDING TO ASTM A-525)

LEG SPLICE BOLTS: SAE GRADE 5 STEEL

RIVETS: 2017-T4 ALUMINUM ALLOY

TOWER MEMBER ALLOWABLE DESIGN STRESSES:

NOTE: ALLOWABLE STRESSES BELOW HAVE BEEN INCREASED BY 33⅓% FOR THE WIND LOAD CONDITION.①

LEGS:

COMPRESSION — (STRESS VARIES ACCORDING TO SLENDERNESS RATIO)②
BEARING —— 126,000 PSI③
SHEAR —— 24,000 PSI④

BRACES:

COMPRESSION — (STRESS VARIES ACCORDING TO SLENDERNESS RATIO)②
BEARING —— 100,800 PSI③
SHEAR —— 19,330 PSI④

BOLTS:

SHEAR —— 29,300 PSI (THREADS EXCLUDED FROM SHEAR PLANE)⑤

RIVETS:

SHEAR —— 18,120 PSI⑥
BEARING —— 53,400 PSI⑥

① PAR. 3.1.2.1 OF A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 1968 EDITION.
② A.I.S.C. MANUAL OF STEEL CONSTRUCTION, 7TH EDITION, PGS. 5.84 & 5.86.
③ PAR. 4.5.3 OF A.I.S.I. SPECIFICATIONS, 1968 EDITION.
④ A.I.S.C. MANUAL OF STEEL CONSTRUCTION, 7TH EDITION, PG. 5.64.
⑤ PAR. 4.5.4 OF A.I.S.I. SPECIFICATIONS, 1968 EDITION.
⑥ ALUMINUM CONSTRUCTION MANUAL, "SPECIFICATIONS FOR ALUMINUM STRUCTURES", 1967 EDITION.

TOWER SHAPE FACTORS:

INDIVIDUAL MEMBERS (LEGS, BRACES, TRANSMISSION LINES)

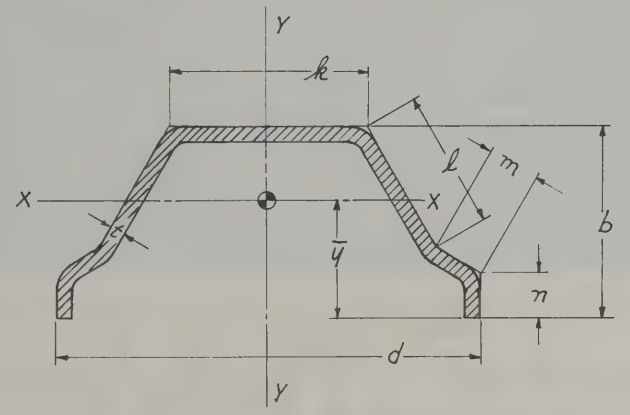
SHAPE FACTOR: 1.00 FOR FLAT ELEMENTS
.67 FOR CYLINDRICAL ELEMENTS

TOWER SECTION:

SHAPE FACTOR: 1.50 TIMES THE PROJECTED AREA OF INDIVIDUAL MEMBERS IN ONE FACE.

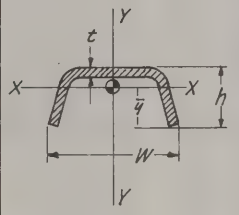
DWG. NO. A-750005

Model BX Tower Section Properties



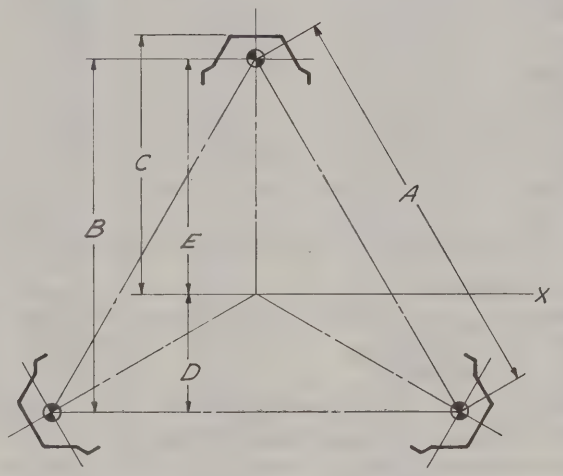
Section Properties of Vertical Elements

Sect.	t in.	b in.	d in.	k in.	l in.	m in.	n in.	Area, in.²	ȳ in.	I_x in.⁴	r_x in.	I_y in.⁴	r_y in.
BX-1	.048	1.1742	2.0984	.7500	1.0134	.1934	.1999	.1637	.6890	.0236	.380	.0746	.675
BX-2	.048	1.1887	2.2145	.8286	1.0198	.2114	.1999	.1698	.7052	.0256	.388	.0862	.712
BX-3	.060	1.2151	2.3544	.9210	1.0298	.2330	.2068	.2228	.7233	.0346	.394	.1260	.752
BX-4	.085	1.2596	2.5441	1.0422	1.0476	.2623	.2212	.3296	.7511	.0548	.408	.2156	.809
BX-5	.1008	1.3058	2.7661	1.1818	1.0704	.2967	.2305	.4151	.7863	.0742	.423	.3172	.874
BX-6	.1008	1.3428	2.9881	1.3214	1.0932	.3311	.2305	.4407	.8160	.0838	.436	.3926	.944
BX-7	.1158	1.3946	3.2399	1.4784	1.1206	.3700	.2391	.5384	.8522	.1106	.453	.5594	1.019
BX-8	.1158	1.5780	3.4916	1.6354	1.1480	.4089	.3794	.6043	.9769	.1540	.505	.7810	1.137



Section Properties of Diagonal Elements

Sect.	t in.	h in.	W in.	Area, in.²	ȳ in.	I_x in.⁴	r_x in.	I_y in.⁴	r_y in.
BX-1	.048	.35	.75	.054	.235	.000620	.107	.00330	.247
BX-2	.048	.35	.75	.054	.235	.000620	.107	.00330	.247
BX-3	.048	.35	.75	.054	.235	.000620	.107	.00330	.247
BX-4	.060	.35	.75	.0675	.228	.000732	.104	.00394	.242
BX-5	.075	.46	1.05	.1125	.307	.002164	.139	.01342	.345
BX-6	.075	.46	1.05	.1125	.307	.002164	.139	.01342	.345
BX-7	.075	.46	1.05	.1125	.307	.002164	.139	.01342	.345
BX-8	.075	.46	1.05	.1125	.307	.002164	.139	.01342	.345



Section Properties of Tower

Sect.	Area (3 Legs) in.²	A in.	B in.	C in.	D in.	E in.	I_x in.⁴	r_x in.	Weight, Lbs.
BX-1	.491	9.53	8.25	5.99	2.75	5.50	7.50	3.91	22
BX-2	.509	11.86	10.27	7.33	3.42	6.85	12.03	4.86	23
BX-3	.668	14.20	12.30	8.69	4.10	8.20	22.58	5.81	28
BX-4	.989	16.58	14.35	10.08	4.78	9.57	45.44	6.78	41
BX-5	1.245	19.23	16.65	11.62	5.55	11.10	76.94	7.86	59
BX-6	1.322	21.89	18.96	13.16	6.32	12.64	105.9	8.95	64
BX-7	1.615	24.56	21.27	14.72	7.09	14.18	162.7	10.04	75
BX-8	1.813	27.41	23.73	16.42	7.91	15.82	227.4	11.20	82

Dwg. No. B-760024

Model BX Tower Design Data

Sect.	Projected Areas									Wind Load per Sect., lbs. at Wind Pressure of			Allowable Loads at Vertical Leg Splices				Allowable Loads at Diagonal Connections					
	Vertical Legs				Diagonals			Totals					Splice Bolts		Thick. of Leg, in.	Allowable Tensile Leg Splice Capacity lbs.	Rivet Dia., in.	Thick. of Brace, in.	Area in.^{2}		Allow. Load, lbs.	
	Exposed Width (1 Leg) in.	Length, in.	Exposed Area (1 Leg) ft.^{2}	Exposed Area (1 Face) ft.^{2}	Width in.	Total Exposed Length (1 Face) in.	Exposed Area (1 Face) ft.^{2}	Total Exposed Area (1 Face) ft.^{2}	Total Exposed Section Area ft.^{2}	10 psf	15 psf	20 psf	No.	Dia.					Brg.	Shear	Brg.	Shear
BX-1	1.73	96	1.15	2.30	.75	173.4	.90	3.20	4.800	48.0	72.0	96.0	2	3/8	.048	5630	5/32	.048	.0075	.0192	400	348
BX-2	1.79	96	1.19	2.38	.75	190.5	.99	3.37	5.055	50.6	75.8	101.1	2	3/8	.048	5810	5/32	.048	.0075	.0192	400	348
BX-3	1.87	96	1.25	2.50	.75	209.2	1.09	3.59	5.385	53.9	80.8	107.7	2	9/16	.060	7320	5/32	.048	.0075	.0192	400	348
BX-4	1.99	96	1.33	2.66	.75	229.0	1.19	3.85	5.775	57.8	86.6	115.5	2	9/16	.085	10,910	3/16	.060	.0112	.0276	598	500
BX-5	2.12	96	1.41	2.82	1.05	251.6	1.83	4.65	6.975	69.8	104.6	139.5	2	9/16	.1008	13,870	1/4	.075	.0187	.0491	1000	890
BX-6	2.24	96	1.49	2.98	1.05	276.6	2.02	5.00	7.500	75.0	112.5	150.0	2	9/16	.1008	14,880	1/4	.075	.0187	.0491	1000	890
BX-7	2.39	96	1.59	3.18	1.05	303.8	2.21	5.39	8.085	80.9	121.3	161.7	3	9/16	.1158	18,340	1/4	.075	.0187	.0491	1000	890
BX-8	2.65	96	1.77	3.54	1.05	335.6	2.45	5.99	8.985	89.9	134.8	179.7	3	9/16	.1158	20,910	1/4	.075	.0187	.0491	1000	890

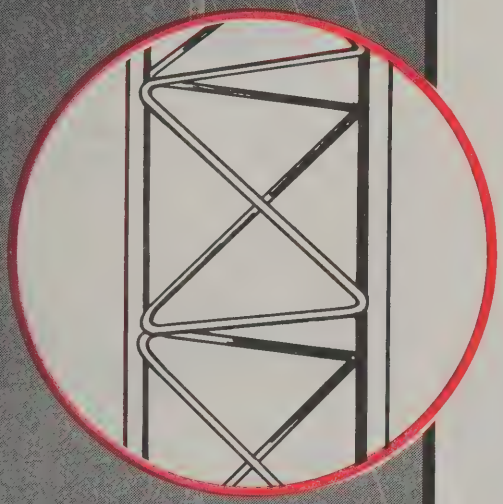
Sect.	Allowable Compressive Loads													
	Vertical Legs							Diagonal Braces						
	L_v in.	r_v in.	$\frac{L_v}{r_v}$	F'_a psi	F_a psi	Cross-Sect. Area (1 Leg) in.^{2}	Allowable Leg Load, lbs.	L_D in.	r_D in.	$\frac{L'_D}{r_D}$ *	F'_a psi	F_a psi	Cross-Sect. Area in.^{2}	Allowable Brace Load, lbs.
BX-1	12 1/2	.380	32.9	24,300	32,400	.1637	5300	15.34	.107	71.7	16,250	21,660	.054	1170
BX-2	12 1/2	.388	32.2	24,380	32,500	.1698	5520	16.78	.107	78.4	15,540	20,720	.054	1120
BX-3	12 1/2	.394	31.7	24,430	32,570	.2228	7260	18.41	.107	86.0	14,670	19,560	.054	1060
BX-4	12 1/2	.408	30.6	24,540	32,710	.3296	10,780	20.16	.104	96.9	13,360	17,810	.0675	1200
BX-5	12 1/2	.423	29.6	24,650	32,870	.4151	13,640	22.22	.139	79.9	15,370	20,490	.1125	2310
BX-6	12 1/2	.436	28.7	24,740	32,990	.4407	14,540	24.41	.139	87.8	14,560	19,410	.1125	2180
BX-7	12 1/2	.453	27.6	24,850	33,130	.5384	17,840	26.66	.139	95.9	13,490	17,990	.1125	2020
BX-8	12 1/2	.505	24.8	25,130	33,510	.6043	20,250	29.19	.139	105.0	12,330	16,440	.1125	1850

*$L'_D = \frac{1}{2} L_D$

Sect. 5 & 6 rivet dia. changed 10-1-77

Dwg. No. B-760025 R1

ROHN NO.45G COMMUNICATION TOWER



This tower is an 18 inch triangular pattern suitable for heights to 300 feet with proper guying! A true multi-use tower.

DESIGN

ROHN No. 45 tower is designed in an 18 inch equilateral triangular pattern. The three legs of the tower are of heavy, 14 gauge, special quality steel. The cross bracing is the ROHN "zig-zag" design using a continuous, solid steel rod, electric welded to side rails every 15 inches. All sections are 10 feet in length.

USAGE

This tower is suitable for mounting communication antennas or other equipment under normal conditions for heights up to a maximum of 300 feet. See specification sheets for complete guying and wind load information.

CONSTRUCTION

Entire tower is accurately constructed, utilizing precision machines and then electric welded throughout. Workmanship and materials are of the highest quality available and fully conforming to specifications.

FINISH

ROHN No. 45 tower sections are completely hot dip galvanized *after fabrication* to give permanent protection against corrosion. Because sections are galvanized as the last operation, all points of welding and other points of construction are fully covered with molten zinc that tends to seal itself should there ever be any breakage on the surface!

SELF-SUPPORTING HEIGHTS FOR 45G TOWER*

WIND LOAD	Factor of Safety—1.5		Factor of Safety—2.3	
	No Ant.	2 Ft²	No Ant.	2 Ft²
10.0 PSF (50 MPH)	90.6	84.0	72.9	66.5
14.4 PSF (60 MPH)	75.9	69.1	61.6	54.5
20.0 PSF (70.7 MPH)	64.2	57.8	51.8	45.4**

*See Installation Instructions

**Recommended

NOTE: Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

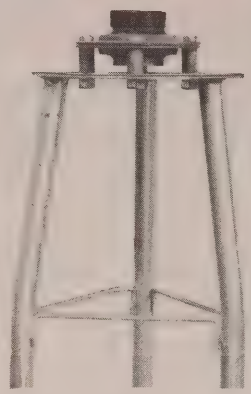
All antenna installations must be grounded per local or national codes.

HOT DIP GALVANIZED

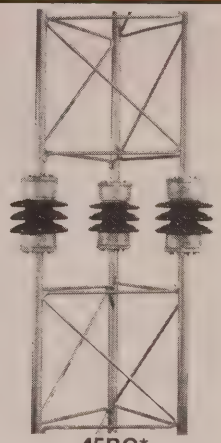
ROHN® NO. 45G TOWER ACCESSORIES

TB-2
THRUST BEARING

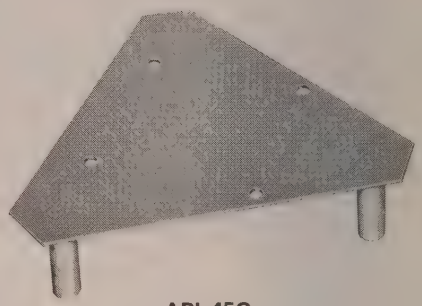
TB-3
HEAVY DUTY
THRUST BEARING



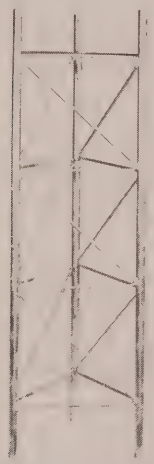
45AG-4
w/TB-2



45RG*
10′ INSULATOR SECTION



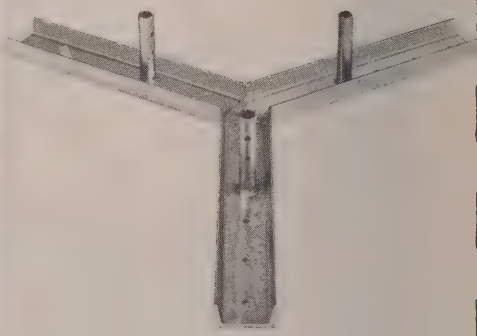
APL45G
BEACON PLATE



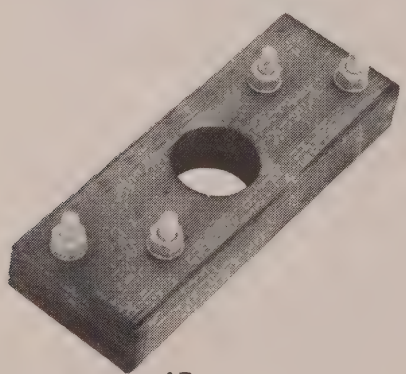
SB45G
5′ SHORT BASE
(for concrete)

BPC45G*
BASE PLATE
(for concrete)

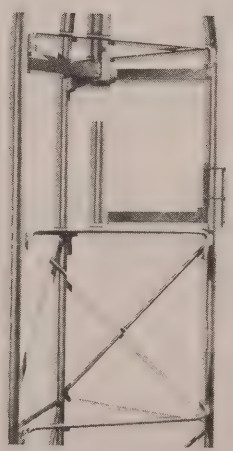
3/4″X12″ PP
PIER PIN



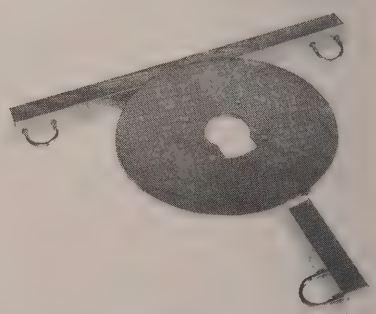
FR45G*
FLAT ROOF MOUNT



AB
AMATEUR BEARING
(for use with 45AG-4
Top Section)



RP45G
ROTOR POST



AS45G
ACCESSORY SHELF

Note: Towers mounted on these bases must be bracketed or guyed.

● *All ROHN No. 45G Tower Accessories are Hot Dip Galvanized after fabrication.*

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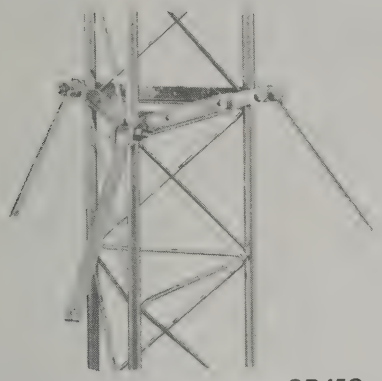
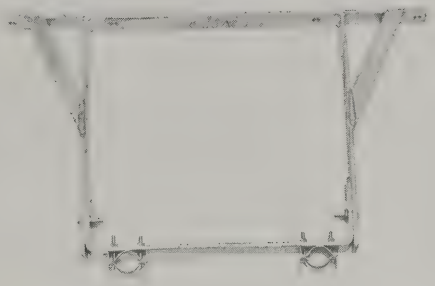
ROHN® NO. 45G TOWER ACCESSORIES



GA45G
GUY ASSEMBLY
(bracket w/torque bars)

GB45G
(guy bracket only)



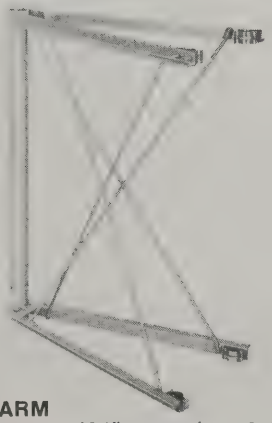
HB45AG
ADJUSTABLE HOUSE BRACKET
(up to 15″ extension)

HB45BG (0 to 24″) not shown
HB45CG (0 to 36″) not shown

TB50
1-1/4″ I.D. X 2″ O.D.
TOWER BUSHING
(for use in 45AG Top Section)

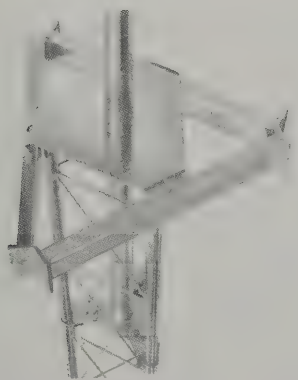
TB75 (not shown)
1-1/2″ I.D. X 2″ O.D.
(for use in 45AG Top Section)

WP45G
WORK PLATFORM
For use on No. 45G tower.

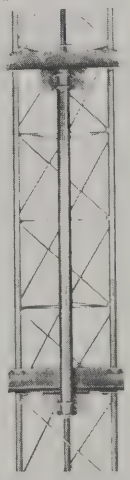


SIDE ARM
SA45G-224 (24″ extension 2-1/4″ O.D.)
SA45G-524 (24″ extension, 2-9/16″ I.D.)
(not shown)

SAB45G-2
SIDE ARM BRACKET 2-1/2″ O.
36″ total length
(for top antenna mounting)

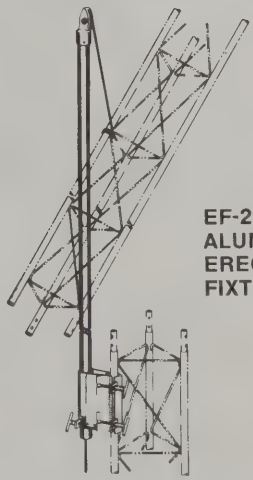


TA45 TORQUE ARM STABILIZER ASSEMBLY
45TDM-2 TOP DISH MT.



DM45G-2
FACE DISH MOUNT
(2-3/8″ O.D. pipe
5′ long)

DM45 -4
(4-1/2″ O.D. pipe
5′ long
not shown)



EF-25-45
ALUMINUM
ERECTION
FIXTURE

● *All ROHN No. 45G Tower Accessories are Hot Dip Galvanized after fabrication.*

ROHN® IN-HOUSE

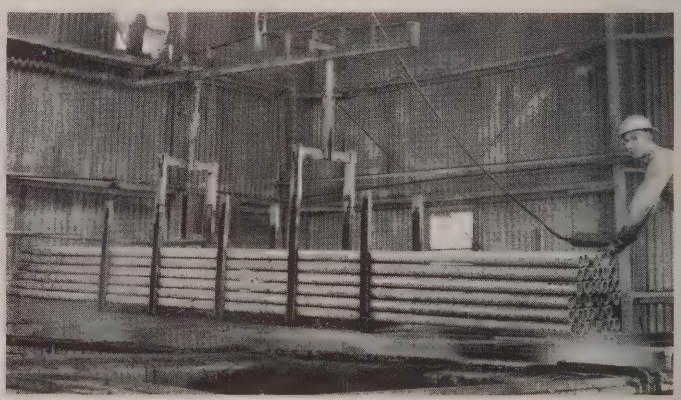
"Quality Control" Galvanizing

means extra value for you!

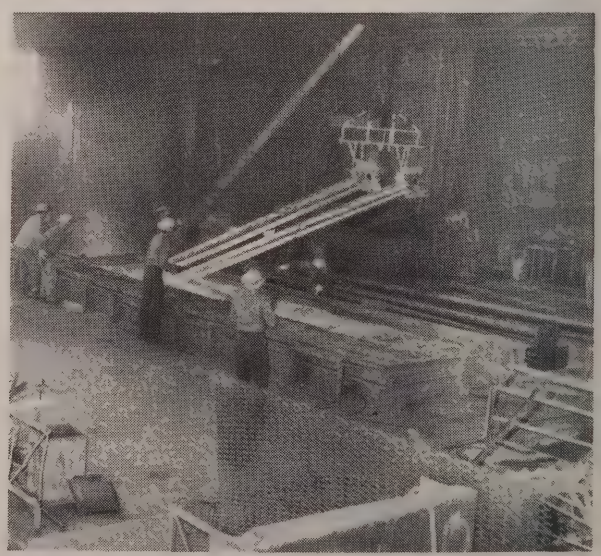
CORROSION RESISTANT: Hot-dipped zinc galvanizing means that ROHN Products are absolutely corrosion-resistant. A minimum molten zinc coating of *2 ounces for every square foot of surface fuses permanently* to the metal, becoming an actual part of the steel so it cannot be separated. Also the tubular steel used in ROHN Towers is coated both *inside* and *outside* to give absolute protection against deterioration from condensation and moisture.

CHIP AND SCRATCH PROOF: If a galvanized surface is scratched or chipped, the surrounding zinc actually "heals the wound" and continues to seal out all corrosive elements! Nothing but hot-dipped galvanizing does this.

PERMANENT DURABILITY: Galvanizing means permanent protection and attractive appearance that cannot be matched by any other type of coating. With ROHN Products, you receive the *very finest* available—anywhere. All Hot-Dipped Galvanizing is done in the ROHN Galvanizing Plant according to ROHN Rigid Controls for Highest Quality.



Shown here are the huge pickling vats at ROHN where towers and other ROHN Products are prepared for galvanizing. Modern, high capacity equipment, skilled, experienced operators and finest raw materials keep ROHN quality high.



ROHN tower sections after fabrication are completely immersed in the molten zinc where all welds, points of construction, inner parts, including the interior of the tubing itself — is heavily coated with zinc.

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61601

FORM NO. 76868 PRINTED IN U.S.A.

#45 TOWER

PART NUMBER		WT.
45G	10' tower section	70
45AG	9' top section	52
45AG1	Top section. Mast support tube is 1¼" galv. pipe, threaded on top and projecting 12" above apex of side rails.	60
45AG2	Top section. Mast support tube is 2½" O.D. tubing, 36" total length, extending 18" above apex of side rails.	60
45AG3	Top section. Mast support tube is 2¼" O.D. tubing, extending 12" above apex of side rails. A 2" O.D. antenna stub will fit snugly inside support tube.	60
45AG4	7' top section. Upper end terminates in 11" dia. flat, circular plate with 2¼" dia. hole in center.	52
45AG5	Top section. Mast support tube is 2-3/4" O.D. and 2-9/16" I.D. tubing, 18" total length.	60
45TG	10' tapered base section	90
*45RG	10' insulator section for 45G tower (includes 3 #10470 insulators)	104
45ACL	10' anti-climb section	165
45ACL3	3 anti-climb metal sheets for attaching to tower section	100
5545G	20' adapter section for joining 45G and 55G sections	160
45JBK	Joint bolt kit	3/4
APL45G	Beacon plate	20
SB45G	5' short base section for concrete	35
*BPC45G	Concrete base plate	39
3/4X12PP	Pier pin (for BPC45G or 45TG - one required)	1
*BPH45G	Hinged base plate for concrete	53
1/2X12BB	Concrete base bolt with double nuts (for BPH45G - four required)	½
*FR45G	Flat roof mount	34
RP45G	Rotor post	3
AS45G	Accessory shelf. Plate for mounting Ham "M" rotor or mast bearing. Mounts inside of tower. When using Model 400 rotor, plate must be redrilled.	9
GA45G	Guy assembly (bracket with torque bars)	20
GB45G	Guy bracket only	16
HB45AG	Adjustable house bracket (0 to 15")	10
HB45BG	Adjustable house bracket (0 to 24")	13
HB45CG	Adjustable house bracket (0 to 36")	19
TB50	Tower bushing for 45AG top (1¼" I.D. x 2" O.D.)	½
TB75	Tower bushing for 45AG top (1½" I.D. x 2" O.D.)	½
AB	Amateur bearing for use with 45AG4 top (2" x 4" x 10" hardware)	1
TB2 (Discontinued)	Thrust bearing, ball bearing, self-aligning, for 2" O.D. tubing, bolts to 45AG4 top	8
TB3	Heavy duty thrust bearing, recommended for 2" O.D. tubing	2½
BPL45G	Top plate with guy lugs for mounting AB, TB2 or TB3 bearing	10
SAB45G2	Side arm bracket for top antenna mounting alongside beacon (2½" O.D. tubing, 36" total length)	17
SA45G224	24" side arm with 36", 2¼" O.D. support tube	22
SA45G524	24" side arm with 18", 2-9/16" I.D. support tube	18
TA45	Torque arm stabilizer assembly	56
45TDM2	Top dish mount w/2" O.D. mast (extends 3' above top plate)	47
45TDM2SP	Top dish mount w/2" standard pipe (extends 5' above top plate)	57
45TDM2EH	Top dish mount w/2" EH pipe (extends 5' above top plate)	66
45TDM25SP	Top dish mount w/2½" standard pipe (extends 5' above top plate)	71
45TDM25EH	Top dish mount w/2½" EH pipe (extends 5' above top plate)	82
DM45G2	Face dish mount w/2" (2-3/8" O.D.) 5' long standard pipe	52
DM454	Face dish mount w/4" (4½" O.D.) 5' long standard pipe	88
WP45G	Work platform	14
SR245	Safety ring	8
EF2545	Aluminum erection fixture, 12' long (fits all models with 1¼" side rails)	18
P2545	Pole only for EF2545	10
H2545	Head only for EF2545	8

*Towers mounted on these bases must be bracketed or guyed.

NOTE: The price on #45 and 5545G sections will be higher on shipments to the following states: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

January 1, 1978

REFERENCE SHEET & INSTALLATION INFORMATION

#45 BRACKETED TOWERS, NON-GUYED

INSTALLATION: Select a tower location sufficiently clear and out of falling distance of power lines since every electrical and telephone wire should be considered dangerous. Tower should be installed by experienced and trained personnel. All antenna installations must be grounded per local or national codes.

BASE: The size of the concrete base for a 50' #45 tower, with a house bracket 12' aboveground, is 3' deep by 2' square. For cases of loose soil, etc., the base must be larger. Spread about 2" of gravel in bottom of hole prior to setting base assembly. The base assembly should be attached to the first 10' section prior to setting into gravel. After setting base assembly on gravel, fill another 3" with gravel around legs of base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. The base assembly and first 10' section should be leveled, plumbed, and temporarily guyed or braced while pouring the concrete. This will insure a plumb tower after installation. Check tower to assure it is plumb and level after pouring concrete. Do not pull base up into the concrete to level it and do not drive it hard into ground as this plugs leg holes and prevents moisture drainage. Crown the top of the concrete slightly to prevent water accumulation. Do not use drive rods as a base for tower when set in concrete.

HEIGHT OF TOWER & BRACKET USES: House brackets must be used and must be mounted at least 12' aboveground to be effective. The #45 tower should not extend more than 45' above a house bracket. (Note: Two house brackets are to be used, equally spaced, on the 80', 90', and 100' towers.) To secure the house bracket, use lag screws no smaller than 3/8" x 2". A special effort should be made to locate the house bracket such that the lag screws go through the siding into a stud. Brackets fastened to the siding only will not hold in a high wind. Tighten the house bracket U-bolts only enough to prevent looseness. Do not dent or flatten the tower upright members by excessively tightening U-bolts.

BOLTS: Installers are urged to use a 10" lining-up punch that tapers from about 1/2" to 5/32" diameter over a 6-1/2" length. If bolts cannot be pushed through the holes with the heel of the hand while rocking the tower, do not hammer them through. Carefully drive the punch into the hole just enough to slightly enlarge it. The leg bolt hole should be just large enough to admit the bolt. Never drill out the holes. Be sure to tighten all leg bolts until they partially flatten the sleeves, causing the sleeves to actually grip the legs inside. Always replace stripped bolts. Upon completing an installation, there should be no vertical movement between tower sections at the joint when the tower is deliberately swayed from side to side.

MISCELLANEOUS: Installation is greatly hastened and simplified by the use of an erection fixture. Anti-climb sections are recommended on all towers to prevent unauthorized persons from climbing tower.

CAUTION ... Be sure hinge bolts on hinged type accessories are loosened before attempting to hinge tower over. Hinge up no more than 45' of #45 tower only. All hinged type bases are recommended to be used to raise tower only without antenna. When raising and lowering tower on any type of hinge base or hinge section, the loads applied for hinging the tower must be applied equally on both sides of tower in order to reduce the possibility of twist on tower and hinges at the base. Special care must be taken to avoid the use of raising and lowering methods which may cause damage to tower or hinges.

All information is based upon antennas with not more than 2 square feet of area in a 20 psf (70 mph) wind load and a safety factor, with antenna installed at tower apex.

See Chart B-691119 for more information on non-guyed towers.

NOTE: All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.

PART NUMBER	
45G-030-BRKT	30' Complete Bracketed Tower
45G-040-BRKT	40' Complete Bracketed Tower
45G-050-BRKT	50' Complete Bracketed Tower
45G-060-BRKT	60' Complete Bracketed Tower
45G-070-BRKT	70' Complete Bracketed Tower
45G-080-BRKT	80' Complete Bracketed Tower
45G-090-BRKT	90' Complete Bracketed Tower
45G-100-BRKT	100' Complete Bracketed Tower

Refer to alphabetical/numerical price list for reference sheet prices on Complete #45G Bracketed Towers.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Rohn Introduces...
New Top Bearing Plate

The new Rohn BPL45G Bearing Plate is pre-punched to accommodate both styles of rotor bearings. Has guy lugs on each corner for direct guying and is hot dip galvanized, after fabrication. Fits standard 45G and 55G straight sections only.

BPL45G Bearing Plate

BPL45G with
TB3 Thrust Bearing

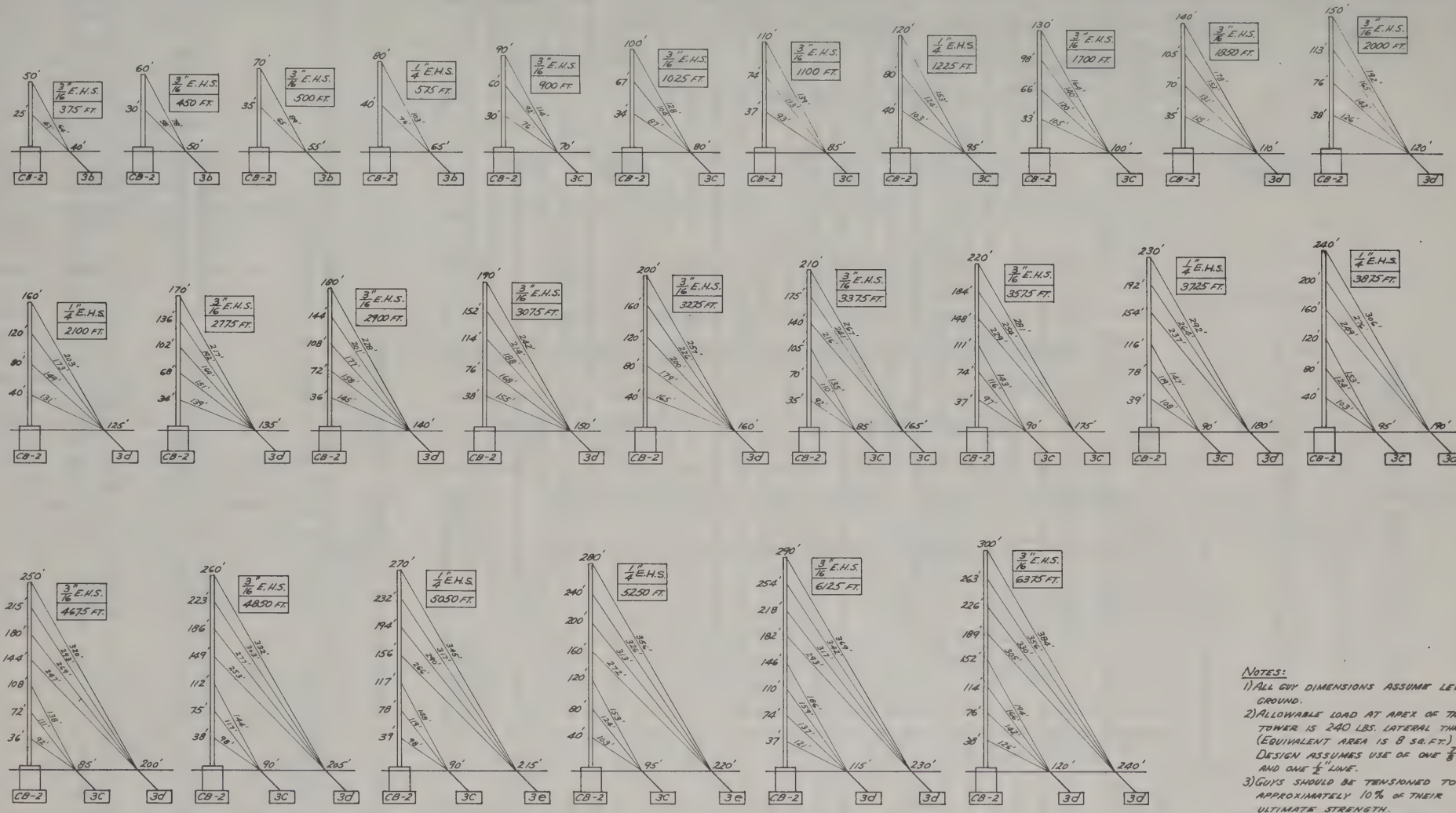
BPL45G with
AB Amateur Bearing

Unarco-Rohn

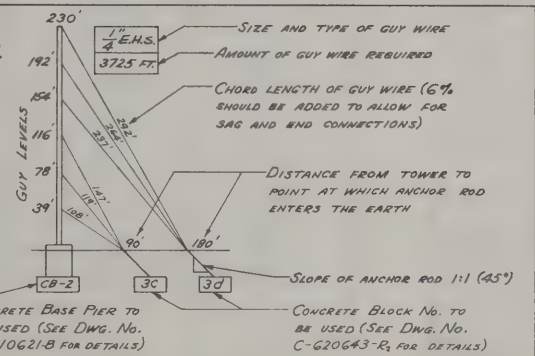
Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

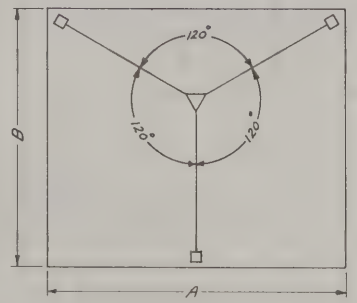
Form No. 781056
Printed In U.S.A.

C-640606



EXPLANATION OF CHART


230'
1/4" E.H.S.
3725 FT.
GUY LEVELS
192'
154'
116'
78'
39'
90'
180'
CB-2
3C
3d
SIZE AND TYPE OF GUY WIRE
AMOUNT OF GUY WIRE REQUIRED
CHORD LENGTH OF GUY WIRE (6% SHOULD BE ADDED TO ALLOW FOR SAG AND END CONNECTIONS)
DISTANCE FROM TOWER TO POINT AT WHICH ANCHOR ROD ENTERS THE EARTH
SLOPE OF ANCHOR ROD 1:1 (45°)
CONCRETE BASE PIER TO BE USED (SEE DWG. NO. C-610621-B FOR DETAILS)
CONCRETE BLOCK NO. TO BE USED (SEE DWG. NO. C-620643-R2 FOR DETAILS)



FOR SPACE REQUIREMENT REFER TO DWG. NO. C-640531

NOTES:
1) ALL GUY DIMENSIONS ASSUME LEVEL GROUND.
2) ALLOWABLE LOAD AT APEX OF TALLEST TOWER IS 240 LBS. LATERAL THRUST. (EQUIVALENT AREA IS 8 SQ. FT.) DESIGN ASSUMES USE OF ONE 7/8" LINE AND ONE 1/2" LINE.
3) GUYS SHOULD BE TENSIONED TO APPROXIMATELY 10% OF THEIR ULTIMATE STRENGTH.
4) ALL TOWERS ARE DESIGNED ACCORDING TO E.I.A. SPECIFICATIONS.

REVISIONS	UPDATED DRAWING	R1 11-18-70	SD
DRAWN AED		TITLE	
CHECKED ck	WIND LOAD = 30 PSF (86.6 MPH)	GUYING DETAILS FOR MODEL 45 TOWER	
APPROVED V.A.R.			
DATE 6-18-64	ROHN MANUFACTURING PEORIA, ILLINOIS	DRAWING NO.	
SCALE NONE		C-640606	R1

ILLINOIS B/P 1000-H

PARTS LIST P-292
(Replaces P-252)

December 1, 1977

PARTS LIST #45G GUYED TOWER

30 lbs./sq. ft. Wind Load

8 sq. ft. of Allowable Load

Tower Hgt.	45G	45AG2	BPC45G with 3/4"x12" PP	APL45G and SAB45G2	GA45G	G.W. 3/16" EHS	G.W. 1/4" EHS	CCF 3/16"	CCF 1/4"	Th. 1/4"	T.B. 3/8"x6" E&E	T.B. 1/2"x12" E&E	GAC 253	GAC 255
50'	4	1	1		2	375'		36		12	6		3	
60'	5	1	1		2	450'		36		12	6		3	
70'	6	1	1		2	500'		36		12	6		3	
80'	7	1	1		2		600'		36	12		6	3	
90'	8	1	1		3	900'		54		18	9		3	
100'	9	1	1		3	1100'		54		18	9		3	
110'	10	1	1		3	1150'		54		18	9		3	
120'	11	1	1		3		1225'		54	18		9	3	
130'	12	1	1		4	1700'		72		24	12			3
140'	13	1	1		4	1850'		72		24	12			3
150'	14	1	1		4	2000'		72		24	12			3
160'	16		1	1	4		2150'		72	24		12		3
170'	17		1	1	5	2775'		90		30	15			3
180'	18		1	1	5	2900'		90		30	15			3
190'	19		1	1	5	3175'		90		30	15			3
200'	20		1	1	5	3275'		90		30	15			3
210'	21		1	1	6	3375'		108		36	18		6	
220'	22		1	1	6	3575'		108		36	18		6	
230'	23		1	1	6		3725'		108	36		18	6	
240'	24		1	1	6		3875'		108	36		18	6	
250'	25		1	1	7	4675'		126		42	21		3	3
260'	26		1	1	7	4850'		126		42	21		3	3
270'	27		1	1	7		5150'		126	42		21	3	3
280'	28		1	1	7		5250'		126	42		21	3	3
290'	29		1	1	8	6150'		144		48	24			6
300'	30		1	1	8	6375'		144		48	24			6

Items shown above are necessary for complete "ground" guyed tower.

For "roof" towers a flat roof mount (FR45G) is substituted for the concrete base plate (BPC45G) and wall anchors (GAWP25) are substituted for the concrete anchors (GAC25).

When ordering specify "roof" or "ground".

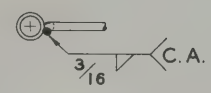
Anchor grounding (AGK) and base grounding (BGK) of all towers are recommended by E.I.A. and Unarco-Rohn. However, grounding is not included in tower prices. See appropriate price list for grounding material.

NOTE: All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.

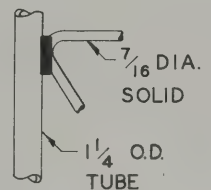
C-630645 REVISED

TOWER SPECIFICATIONS

DISTANCE BETWEEN SIDE RAILS (CENTER TO CENTER)	16 3/4"
OVERALL LENGTH OF SECTION	10'-5"
WEIGHT PER SECTION	70 LBS.
SIDE RAIL DIAMETER AND GAUGE	1 1/4" O.D. 14GA.
CROSS SECTIONAL AREA - ONE LEG	.3043 SQ. IN.
GROSS ALLOWABLE VERTICAL LOAD ON THE BOTTOM TOWER SECTION	23,850 LBS.
MAXIMUM ALLOWABLE AXIAL COMPRESSION OF THE CROSS SECTION OF ONE SIDE RAIL	7,950 LBS.
MEASURED TENSILE STRENGTH OF ONE SIDE RAIL	19,800 LBS.
MEASURED TENSILE STRENGTH OF ONE BOLTED LEG JOINT	16,200 LBS.
MAXIMUM ALLOWABLE TENSION IN EACH BOLTED LEG JOINT	6,480 LBS.
SAFE MOMENT OF RESTRAINT	9,610 FT. LBS.
L - UNBRACED LENGTH OF SIDE RAIL (DISTANCE BETWEEN CROSSPIECES)	15 3/4"
R - RADIUS OF GYRATION OF SIDE RAIL	.414"
L/R FOR MAIN LEG MEMBER	38.0
WIND LOAD PER LINEAL FOOT OF TOWER AT THE HORIZONTAL WIND PRESSURES (PER SQUARE FOOT OF FLAT SURFACE) LISTED BELOW:	
30 LBS.	8.78
40 LBS.	11.70
50 LBS.	14.63

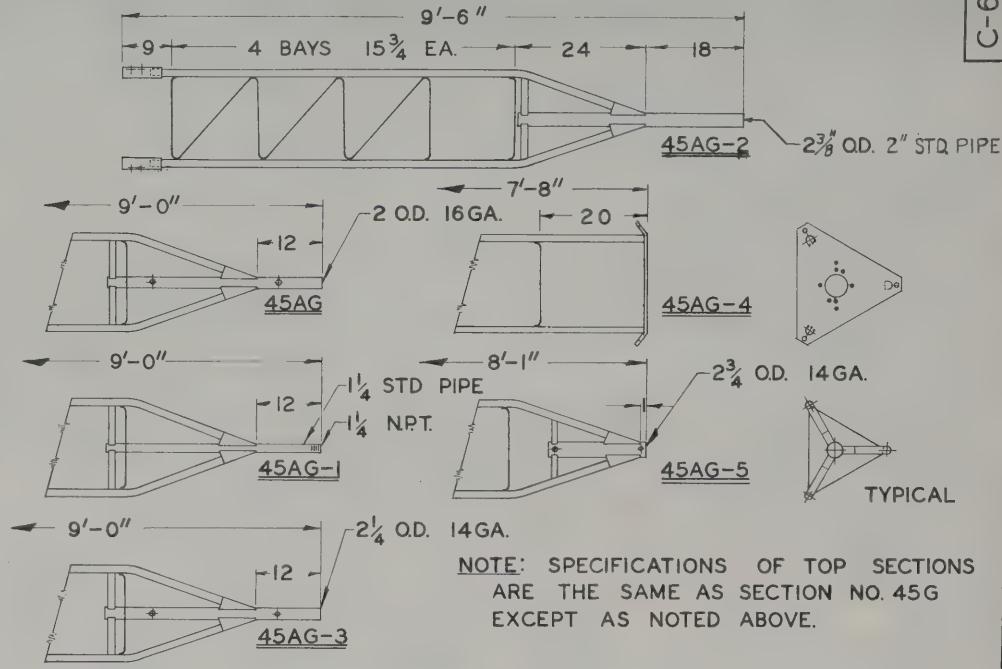


PLAN



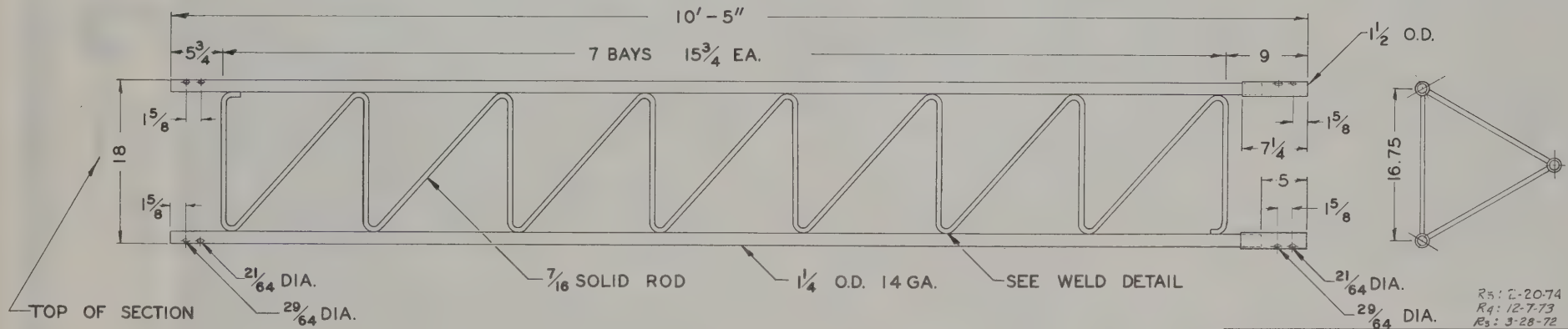
ELEVATION

WELD DETAIL



NOTE: SPECIFICATIONS OF TOP SECTIONS ARE THE SAME AS SECTION NO. 45G EXCEPT AS NOTED ABOVE.

STANDARD TOP SECTIONS



NO. 45G SECTION

3 - 5/16" DIA. X 2 3/8" LG., NC BOLTS
3 - 7/16" DIA. X 2 1/2" LG., NC BOLTS

NOTE: ALL DIMENSIONS IN INCHES EXCEPT AS NOTED

R5: 2-20-74 JER
R4: 12-7-73 JER
R3: 3-28-72 WBM

R7	REVISED P/N 45AG4	5-12-78	AED	R6	REVISE JT. BOLT 9-14-76 WBM

REVISED 4-20-67 | REVISED JT. BOLTS 9-1-71 R-1

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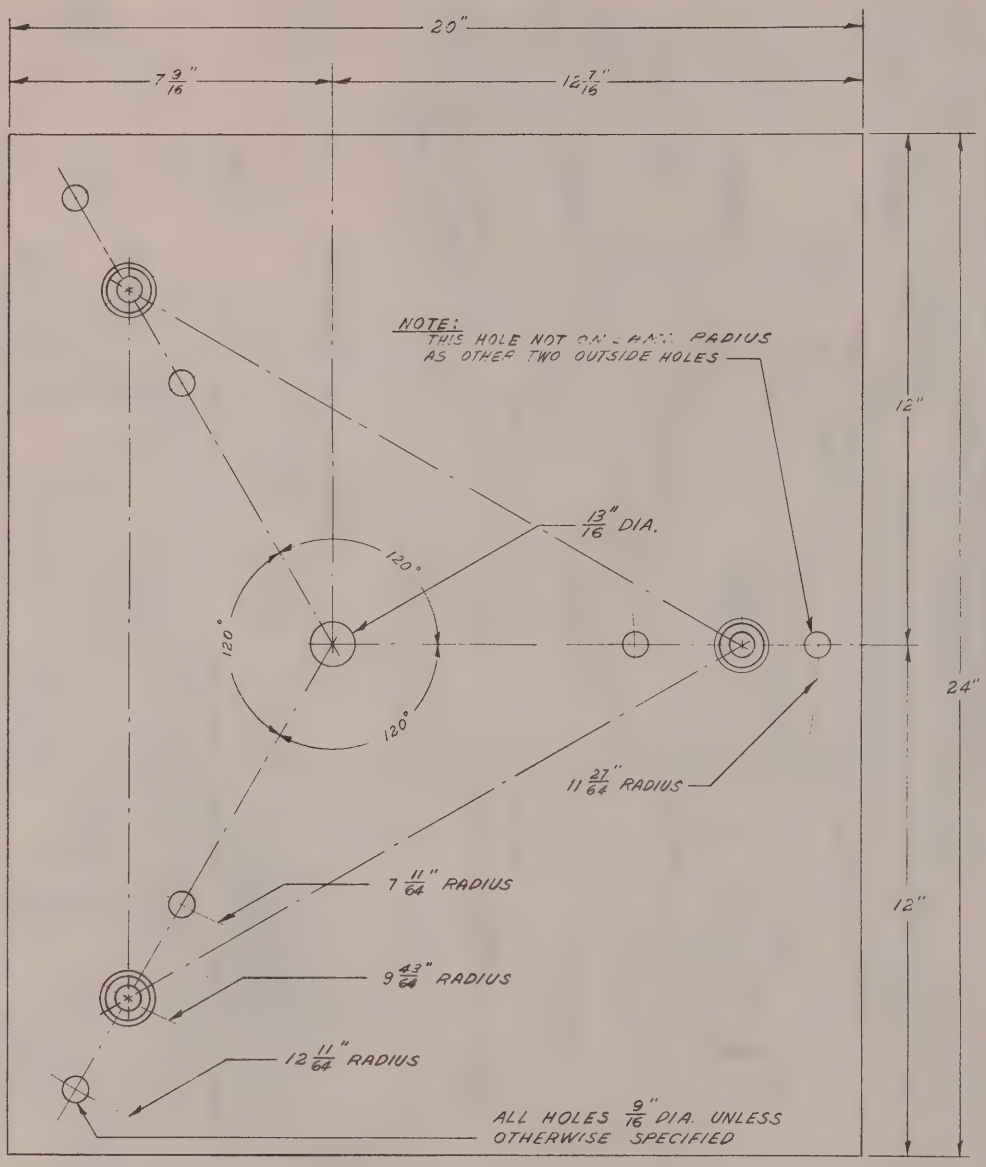
DRAWN P.M.	CUSTOMER	TITLE
CHECKED ACH		MODEL 45 TOWER SECTION
APPROVED DWC		
DATE 6-25-63	ROHN MANUFACTURING	DRAWING NO.
SCALE	PEORIA, ILLINOIS	C-630645 R7

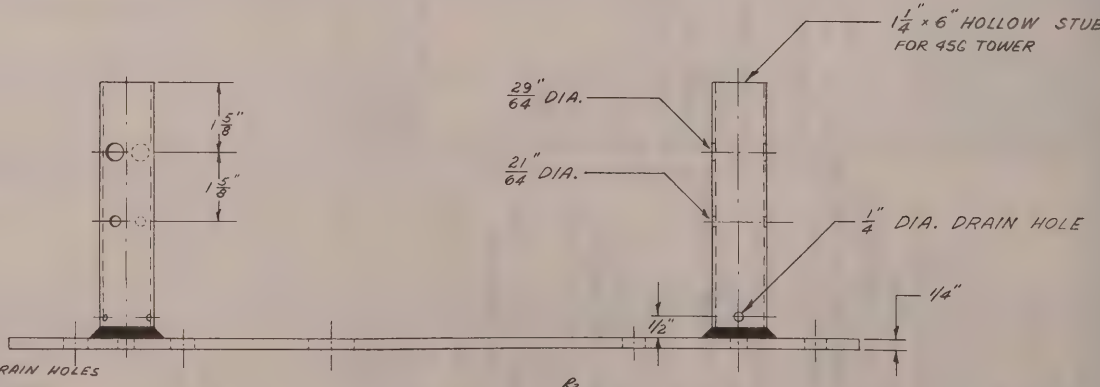
ILLINOIS B/P 1000-H

C:640645-R3



R3	ADDED NOTE	7-6-76	DK	
R2	REVISED DRAIN HOLE & STUB	1-9-75	RDB	
R1	ADDED NOTE INDICATED	2-14-74	JER	

DRAWN M. BUENDIA	CUSTOMER	TITLE	BASE PLATE FOR MODEL 45 TOWER
CHECKED [illegible]			
APPROVED [illegible]	ROHN MANUFACTURING PEORIA, ILLINOIS	DRAWING NO.	C-640645R3
DATE 6-30-54			
SCALE			



NOTE:
AFTER GALVANIZING CHECK DRAIN HOLES TO SEE THAT THEY ARE NOT PLUGGED.

R3 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

BASE PLATE FOR CONCRETE PIER
(PART NO. BPC-45)

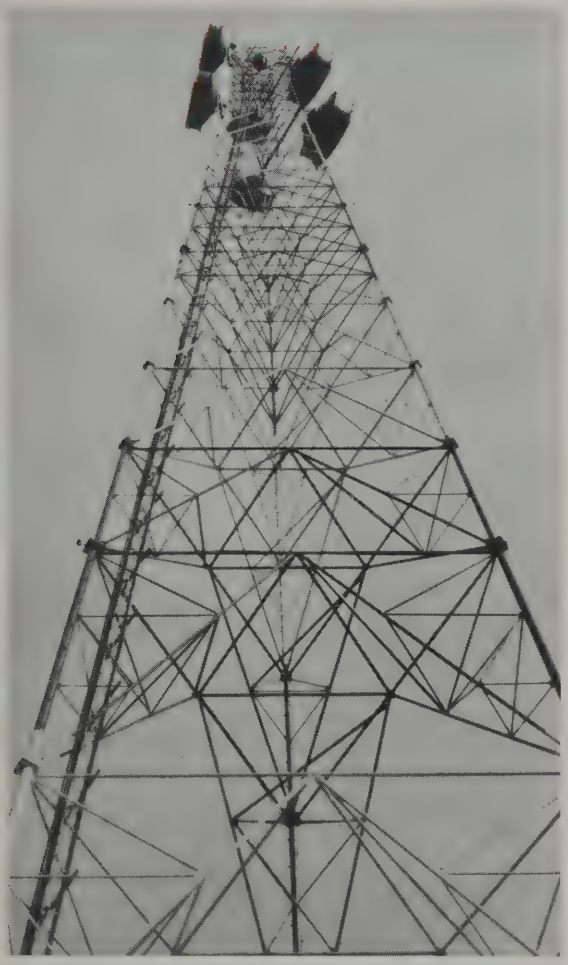
NOTE: ®
FOR USE WITH GUYED AND BRACKETED TOWERS ONLY.

Unarco-Rohn

Division of Unarco Industries, Inc.
P.O. Box 2000, Peoria, Illinois 61601

ROHN® SSV

SELF-SUPPORTING COMMUNICATION TOWERS



Here is a superbly designed, unique tower series that fills a wide range of needs because of their extraordinary versatility! Widely used for all types of communication, broadcasting, microwave and industrial needs, the ROHN SSV series has many outstanding features to make it worthy of consideration for your requirements.

Outstanding Features of the ROHN® "SSV" Series Towers . . .

- Designed for a minimum wind load of 30 psf. Towers requiring higher wind or ice loads are no problem due to the tower's amazing versatility.
- Standard designs available in heights to 500 feet depending on loading. Special towers available depending on specific requirements.
- The SSV series make use of primarily knock-down construction for on-site assembly, which reduces shipping costs.
- Towers for minimal loadings are available in welded construction in heights up to 60 feet, shipped in 20 foot sections.
- All components and hardware are Hot Dip Galvanized **after** fabrication with a zinc coating per E.I.A. Standards.
- All ROHN SSV series towers are engineered, designed and fabricated to meet or exceed latest E.I.A. specifications.

Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel and remarked with hazard and warning labels at least twice a year to insure safety and proper performance

All antenna installations must be grounded per local or national codes.

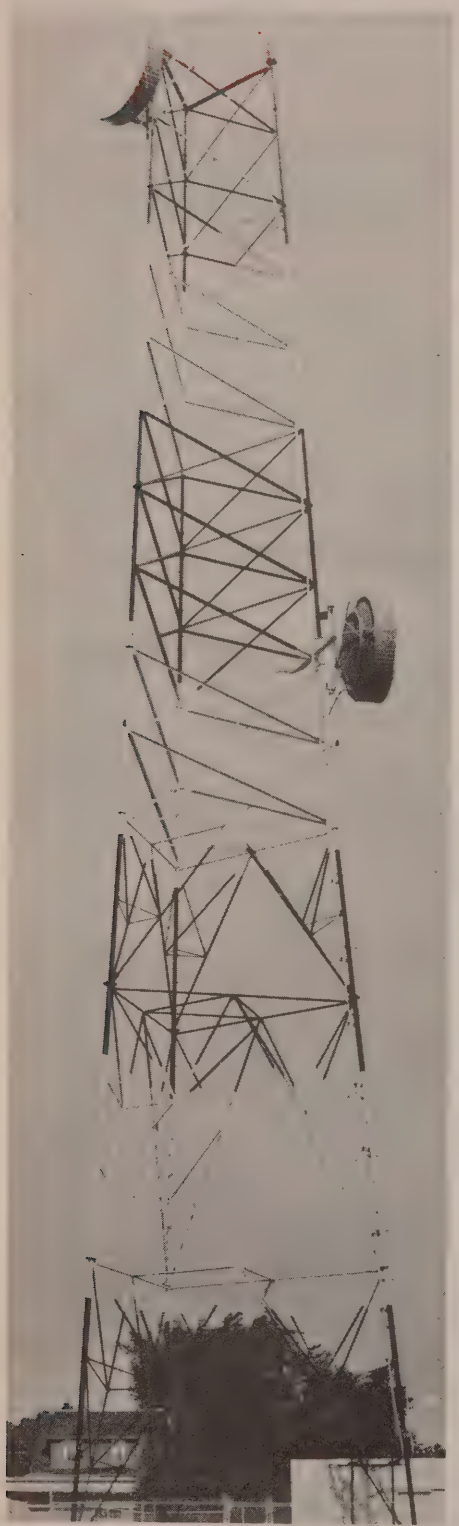
Unarco-Rohn

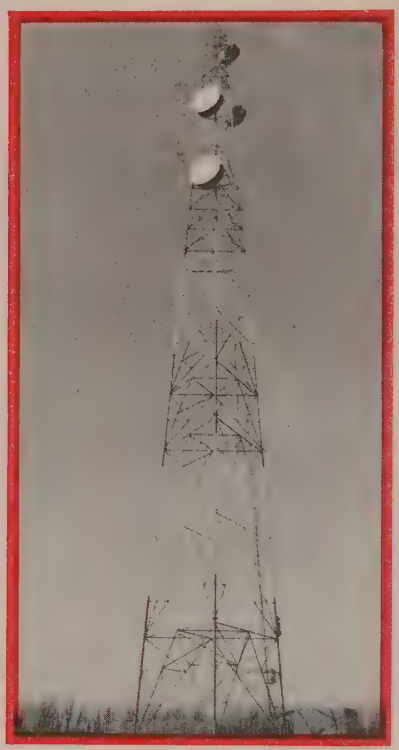
Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

FORM NO. 74342

PRINTED IN U.S.A.

EXAMPLES OF ROHN® SSV TOWER INSTALLATIONS





MICROWAVE / BROADCASTING / COMMUNICATIONS

SHEET D-1096
(Replaces D-933
and D-1043)

April 15, 1975

SELF-SUPPORTING TOWER

SSVN SERIES

PART NUMBER			WT.
	STANDARD WELDED TOWER SECTIONS		
1W	18' straight section		116
1W-B	10' straight section		65
1W-B-APL	10' straight section w/support tube & beacon plate		85
2W	20' tapered section		160
2W-B	10' straight section		90
2W-APL	20' tapered section w/support tube & beacon plate		180
2W-B-APL	10' straight section w/support tube & beacon plate		110
2W-ST	20' straight section		180
3WN	20' tapered section		230
3WN-B	10' straight section		125
3WN-ST	20' straight section		250
	STANDARD KNOCK DOWN (TAPERED) TOWER SECTIONS		
4N	20' section		435
5N	20' section		540
6N	20' section		480
7N	20' section	Lugs for step bolts welded	545
8N	20' section	to one leg of section	700
9N	20' section	included in prices - approx.	720
10N	20' section	15" spacing	830
11N	20' section		1410
12N	20' section		1515
13N	20' section	Lugs for step bolts welded	1700
14N	20' section	to all 3 legs of section	2470
15N	20' section	included in prices - approx.	3155
16N	20' section	15" spacing	3305
	STANDARD KNOCK DOWN (STRAIGHT) TOWER SECTIONS		
4N-B	10' section		250
4N-ST	20' section		480
5N-B	10' section		300
5N-ST	20' section		590
6N-ST	20' section		530
7N-ST	20' section	Lugs for step bolts welded	605
8N-ST	20' section	to one leg of section	780
9N-ST	20' section	included in prices - approx.	860
10N-ST	20' section	15" spacing	990
11N-ST	20' section		1745
	HEAVY DUTY KNOCK DOWN (TAPERED) TOWER SECTIONS		
6N	20' section		480
7N	20' section	Lugs for step bolts welded	545
8N	20' section	to one leg of section	700
9NH	20' section	included in prices - approx.	840
10NH	20' section	15" spacing	945
11N	20' section		1410
12NH	20' section		1730
13NH	20' section	Lugs for step bolts welded	1960
14NH	20' section	to all 3 legs of section	2735
15NH	20' section	included in prices - approx.	3530
16NH	20' section	15" spacing	3680
	HEAVY DUTY KNOCK DOWN (STRAIGHT) TOWER SECTIONS		
6N-ST	20' section		530
7N-ST	20' section	Lugs for step bolts welded	605
8N-ST	20' section	to one leg of section	780
9NH-ST	20' section	included in prices - approx.	970
10NH-ST	20' section	15" spacing	1100
11N-ST	20' section		1745

NOTE: 10' knock down straight sections - 75% of 20' section price

TO ORDER: Select tower height and order sections and necessary accessories for antenna load and wind load requirements as shown on specification sheets. See appropriate drawings in all cases.

All sections are galvanized after fabrication. Sections 6 thru 16 include necessary step bolts, packaged separately. Knock down sections must be assembled on site.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SELF-SUPPORTING TOWER

SSVN SERIES

PART NUMBER		WT.
ANCHOR BOLTS FOR STANDARD AND HEAVY DUTY SECTIONS		
Individual Anchor Bolts (12 required per tower)		
3/8X18AB	For sections 1 and 2	3/4
1/2X24AB	For section 3	1½
5/8X30AB	For sections 4, 5, 6, 7, 8 and 9	3
3/4X36AB	For section 10	5½
7/8X42AB	For sections 11, 12 and 13	9
1X48AB	For sections 14, 15N and 16N	13
1X72AB	For sections 15NH and 16NH	18
Anchor Bolt Assemblies		
6N-AB	For sections 6N, 7N, 8N, 9N and 9NH (consists of 12 - 5/8X30AB w/templates)	50
10N-AB	For sections 10N and 10NH (consists of 12 - 3/4X36AB w/templates)	80
11N-AB	For sections 11N, 12N, 12NH, 13N and 13NH (consists of 12 - 7/8X42AB w/templates)	110
14N-AB	For sections 14N, 14NH, 15N and 16N (consists of 12 - 1X48AB w/templates)	200
15NH-AB	For sections 15NH and 16NH (consists of 12 - 1X72AB w/templates)	260
ACCESSORIES FOR STANDARD AND HEAVY DUTY SECTIONS		
Tapered Tops		
1-TT	For sections 1W, 1W-B or 2W	18
3-TT	For sections 2W-B, 2W-ST or 3WN	20
4-TTN	For sections 3WN-B, 3WN-ST or 4N	21
5-TTN	For sections 4N-B, 4N-ST or 5N	23
6-TT	For sections 5N-B, 5N-ST or 6N	25
4' Short Base Sections		
SB-2	For section 2W	45
SB-3N	For section 3WN	65
SB-4N	For section 4N	80
SB-5	For section 5N	105
Beacon Plates and Cap Plates		
APL-3W	Beacon plate for section 3WN	15
APL-4A	Beacon plate for section 4N	13
APL-4HA	Beacon plate and two cap plates for sections 5N or 6N	15
APL-5A	Beacon plate and two cap plates for sections 7N, 8N, 9N or 10N	15
APL-6A	Beacon plate and two cap plates for section 11N	16
APL-7A	Beacon plate and two cap plates for sections 12N, 13N or 14N	17
CP-4A	Cap plates (set of 3 w/nuts and bolts) for section 6N	15
CP-5A	Cap plates (set of 3 w/nuts and bolts) for sections 7N, 8N, 9N or 10N	15
CP-6A	Cap plates (set of 3 w/nuts and bolts) for section 11N	15
CP-7A	Cap plates (set of 3 w/nuts and bolts) for sections 12N, 13N or 14N	15
BCA-5A	Beacon plate, cap plate and antenna support tube for sections 6N-ST, 7N, 8N, 9N or 10N	36
BCA-6A	Beacon plate, cap plate and antenna support tube for section 11N	37
BCA-7A	Beacon plate, cap plate and antenna support tube for sections 12N, 13N or 14N	39
Side Arm Brackets for Top Antenna Mounting Alongside Beacon		
SAB-2-5	For sections 2W thru 5N	13
SAB-611-2	For sections 6 and 7	50
SAB-611-25	For sections 8, 9 and 10	50
SAB-611-3	For section 11	50
Type 1W Side Arm Booms for SSVN Sections**		
SSV-25-6B	6' boom for sections 2 thru 5	61
SSV-25-9B	9' boom for sections 2 thru 5	81
SSV-6-6B	6' boom for section 6	69
SSV-67-9B	9' boom for sections 6 and 7	89
SSV-67-12B	12' boom for sections 6 and 7	110
SSV-7-15B	15' boom for section 7	133
SSV-8-9B	9' boom for section 8	92
SSV-89-12B	12' boom for sections 8 and 9	113
SSV-8910-15B	15' boom for sections 8, 9 and 10	136
SSV-910-18B	18' boom for sections 9 and 10	147

**Boom lengths mentioned above are the total length of the boom. Each boom includes an antenna mast kit w/2" (2-3/8" OD) 3' long standard pipe and hardware, plus kit w/hardware for mounting boom to required section. NOTE: Total required boom length is determined by section number, section width at mounting elevation and amount of the boom needed as side arm to extend beyond face of tower on one side. (See appropriate drawings for face widths of tower sections and Dwg. C-710348 for boom installation information.)

Miscellaneous		
L-SSVN	Ladder, leg mounted	4/ft
L-SSVN-IX	Ladder, inside corner mounted, for X-braced sections 7N-ST thru 16	8/ft
DM-SSL	Leg dish mount w/4" (4½" OD) 5' long standard pipe	135
*DTB-SSL	Dish tie back angle or clips for DM-SSL	
RMB-SS	Reflector mount (for leg mounting)	130
*MTB-SS-H	Reflector tie backs	
EF-SSV	Erection fixture, 16' long (for use w/sections 2 thru 10 only)	90
EF-SSV-RH	Erection fixture (same as above) with rotating head	100

*Prices available upon request.

Refer to alphabetical/numerical price list for current prices.

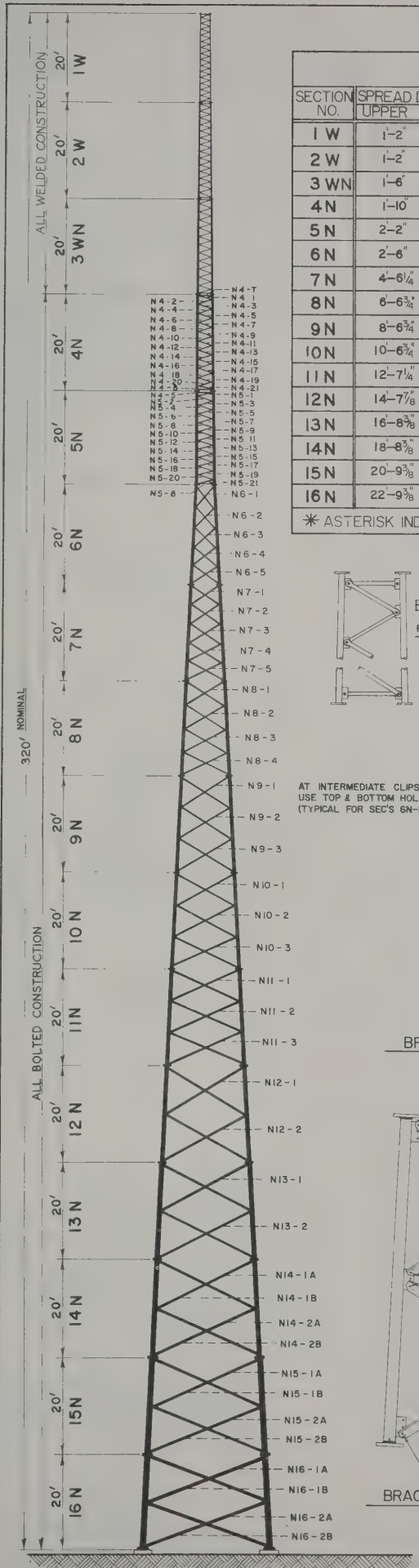
F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

TOWER SCHEDULE

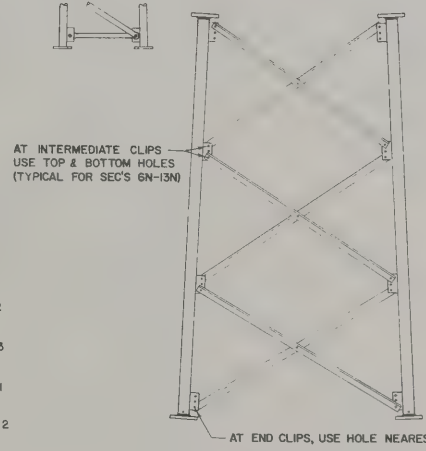
SECTION NO.	SPREAD DIMENSION UPPER	SPREAD DIMENSION LOWER	TOWER LEGS 50 KSI YIELD STR.	TOWER BRACES MIN. 33 KSI YIELD STR.	FLANGE PLATES TOP	FLANGE PLATES BOTTOM	FLANGE BOLTS	BRACE BOLTS
1W	1'-2"	1'-2"	9/16" Ø SOLID	3/8" Ø SOLID	3 X 3 X 3/8 2 21/32" B.C.	3 X 3 X 3/8 2 21/32" B.C.	12-3/8 X 1 1/2"	NONE
2W	1'-2"	1'-6"	3/4" Ø SOLID	3/8" Ø SOLID	3 X 3 X 3/8 2 21/32" B.C.	3 X 3 X 3/8 2 21/32" B.C.	12-3/8 X 1 1/2"	NONE
3WN	1'-6"	1'-10"	15/16" Ø SOLID	7/16" Ø SOLID	3 X 3 X 3/8 2 21/32" B.C.	4 X 4 X 1/2 3 1/2" B.C.	12-1/2 X 2"	NONE
4N	1'-10"	2'-2"	1 1/4" Ø SOLID	5/8" Ø SOLID	4 X 4 X 1 1/2 3 1/8" B.C.	4 1/2 X 4 1/2 X 5/8 4 1/4" B.C.	12-5/8 X 2 1/4"	72-3/8 X 1 1/2"
5N	2'-2"	2'-6"	1 7/16" Ø SOLID	5/8" Ø SOLID	4 1/2 X 4 1/2 5/8 4 1/4" B.C.	4 1/2 X 4 1/2 X 5/8 4 1/4" B.C.	12-5/8 X 2 1/4"	72-3/8 X 1 1/2"
6N	2'-6"	4'-6 1/4"	2" Ø PIPE	L 1 1/2 x 1 1/2 x 1/8"	4 1/2 X 4 1/2 X 1/2" 4 1/4" B.C.	5 X 5 X 3/4" 4 15/16" B.C.	12-5/8 X 2 1/2"	75-1/2 X 1 1/4"
7N	4'-6 1/4"	6'-6 3/4"	2" Ø PIPE	L 1 1/2 x 1 1/2 x 1/8"	5 X 5 X 3/4" 4 15/16" B.C.	5 X 5 X 3/4" 4 15/16" B.C. *	12-5/8 X 2 1/2"	75-1/2 X 1 1/4"
8N	6'-6 3/4"	8'-6 3/4"	2 1/2" Ø PIPE	L 1 1/2 x 1 1/2 x 1/8"	5 X 5 X 3/4" 4 15/16" B.C.	5 X 5 X 3/4" 4 15/16" B.C.	12-5/8 X 2 1/2"	60-1/2 X 1 1/4"
9N	8'-6 3/4"	10'-6 3/4"	2 1/2" Ø PIPE	L 1 3/4 x 1 3/4 x 1/8"	5 X 5 X 3/4" 4 15/16" B.C.	5 X 5 X 3/4" 4 15/16" B.C.	12-5/8 X 2 1/2"	45-1/2 X 1 1/4"
10N	10'-6 3/4"	12'-7 1/4"	2 1/2" Ø PIPE	L 2 x 2 x 1/8"	5 X 5 X 3/4" 4 15/16" B.C.	6 X 6 X 3/4" 5 21/32" B.C. *	12-3/4 X 2 3/4"	45-1/2 X 1 1/4"
11N	12'-7 1/4"	14'-7 7/8"	3" Ø PIPE	L 2 1/2 x 2 1/2 x 3/16"	6 X 6 X 3/4" 5 21/32" B.C.	7 X 7 X 1" 7 1/16" B.C. *	12-7/8 X 3 1/2"	45-1/2 X 1 1/4"
12N	14'-7 7/8"	16'-8 3/8"	3 1/2" Ø PIPE	L 3 x 3 x 3/16"	7 X 7 X 1" 7 1/16" B.C.	7 X 7 X 1" 7 1/16" B.C. *	12-7/8 X 3 1/2"	30-5/8 X 1 1/2"
13N	16'-8 3/8"	18'-8 3/8"	4" Ø PIPE	L 3 x 3 x 3/16"	7 X 7 X 1" 7 1/16" B.C.	7 X 7 X 1" 7 1/16" B.C.	12-7/8 X 3 1/2"	30-5/8 X 1 1/2"
14N	18'-8 3/8"	20'-9 3/8"	4" Ø PIPE	L 3 1/2 x 3 1/2 x 1/4"	7 X 7 X 1" 7 1/16" B.C.	9 1/2 X 9 1/2 X 1 1/4" 9 1/2" B.C. *	12-1 X 4 1/4"	54-5/8 X 1 3/4"
15N	20'-9 3/8"	22'-9 3/8"	5" Ø PIPE	L 4 x 4 x 1/4"	9 1/2 X 9 1/2 X 1 1/4" 9 1/2" B.C.	9 1/2 X 9 1/2 X 1 1/4" 9 1/2" B.C.	12-1 X 4 1/4"	54-5/8 X 1 3/4"
16N	22'-9 3/8"	24'-9 3/8"	5" Ø PIPE	L 4 x 4 x 1/4"	9 1/2 X 9 1/2 X 1 1/4" 9 1/2" B.C.	9 1/2 X 9 1/2 X 1 1/4" 9 1/2" B.C.	12-1 X 4 1/4"	54-5/8 X 1 3/4"

* ASTERISK INDICATES THAT THE BOTTOM FLANGE PL. OF THAT SECTION IS OFFSET.

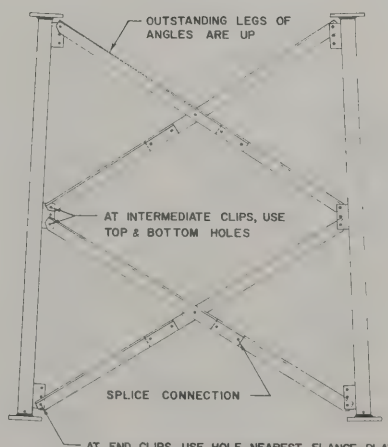


320' TOWER ELEVATION

BRACING DETAILS FOR SECTIONS 4N & 5N



BRACING DETAIL FOR SECTIONS 6N-13N


OUTSTANDING LEGS OF ANGLES ARE UP
AT INTERMEDIATE CLIPS, USE TOP & BOTTOM HOLES
SPLICE CONNECTION
AT END CLIPS, USE HOLE NEAREST FLANGE PLATE

BRACING DETAIL FOR SECTIONS 14N-16N

WEIGHTS

SEC. NO.	LEGS	BRACES	TOTAL
1W			116
2W			160
3WN			230
4N	260	175	435
5N	345	195	540
6N	290	190	480
7N	300	245	545
8N	426	274	700
9N	420	300	720
10N	430	400	830
11N	570	840	1,410
12N	690	825	1,515
13N	790	910	1,700
14N	845	1,625	2,470
15N	1,155	2,000	3,155
16N	1,155	2,150	3,305

GENERAL NOTES:

1. LEG MARK NO'S ARE THE SAME AS SECTION NO'S AND ARE STAMPED AT THE BASE OF EACH LEG OF EACH SECTION.
2. ALL MARK NO'S METAL STAMPED BEFORE GALVANIZING.
3. PAL NUTS PROVIDED FOR ALL TOWER BOLTS.
4. STEP BOLTS PROVIDED ON ONE LEG FOR SECTIONS 6N THRU 11N, AND STEP BOLTS ON 3 LEGS FOR SECTIONS 12N THRU 16N.
5. ALL TOWER MEMBERS ARE HOT-DIPPED GALVANIZED AFTER FABRICATION.
6. SEE DWG. D-700300 FOR FOUNDATION DETAILS.

NO	DESCRIPTION	DATE	BY
R4	CHANGED 14N, 15N, & 16N BRACE MAT'L & WT'S.	12-10-73	JER
R3	FLANGE BOLTS IN SEC. 4N WERE 2½" LG.	2/3/72	GLS
R2	SECT. 3WN WAS 3W	7/6/71	GWA
R1	SECTIONS 4W & 5W REPL. BY 4N & 5N	5/5/71	GWA

REVISIONS

ROHN

TITLE: MODEL SSV TOWER
STANDARD SERIES

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FILE NO

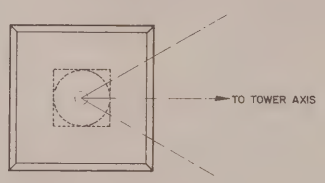
SCALE	NONE	FINISH	
DRAWN	HA & DR 8-1-69	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
CHECKED	10-29-71	TOLERANCES	DWG NO. E-690800
APPROVED	10-29-71		R4

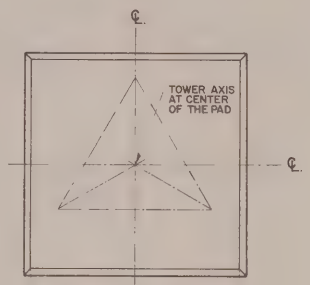
FOUNDATION DATA

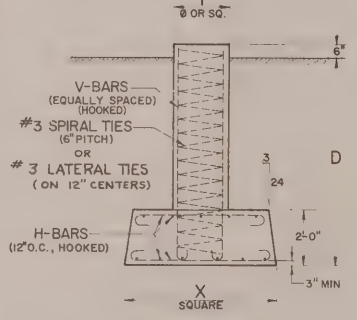
TOWER BASE SEC. NO.	MAX. ALLOWABLE LEG † STRESS LBS.	MAX. ALLOWABLE SHEAR† LBS.	ANCHOR BOLT DATA						PIER & PAD							PAD		DRILL & BELL				
			LAYOUT DIMENSIONS M	N	R	SIZE	BOLT CIRCLE DIA.	PROJ.	D	X	Y	V-BARS	H-BARS	REQD CONC CU.YDS ROUND PIER *	SQUARE PIER *	W	REQD. CONC. CU. YDS.	D	X	Y	V-BARS.	REQD.* CONC. CU.YDS
1W			1'-2"	1'-0 1/8"	0'-8 11/16"	12-3/8 x 18	2 21/32	2 1/4								3'-0	1.4					
2W			1'-6"	1'-3 9/16"	0'-10 3/8"	12-3/8 x 18	2 21/32	2 1/4								4'-0	2.5					
3WN			1'-10"	1'-7 1/16"	1'-0 11/16"	12-1/2 x 24	3 1/2	3								5'-0	3.8					
4N			2'-2"	1'-10 1/2"	1'-3"	12-5/8 x 30	4 1/4	3 1/2								6'-6"	6.4					
5N			2'-6"	2'-2"	1-5 5/16"	12-5/8 x 30	4 1/4	3 1/2								7'-6"	8.5					
6N			4'-6 1/4"	3'-11"	2'-7 5/16"	12-5/8 x 30	4 15/16	3 1/2								8'-0	9.6					
7N	25,300	1,000	6'-6 3/4"	5'-8 3/16"	3-9 1/2"	12-7/8 x 30	4 15/16	3 1/2	6'-6"	4'-6"	1'-6"	6 # 5	# 4	5.5	5.8	10'-0	15.0	8'-0"	4'-0"	2'-0"	6 # 5	3.8
8N	39,400	1,300	8'-6 3/4"	7'-5"	4'-11 5/16"	12-5/8 x 30	4 15/16	3 1/2	8'-0"	5'-0"	2'-0"	8 # 5	# 4	7.8	8.5			9'-0"	5'-0"	2'-6"	8 # 5	6.7
9N	32,700	1,300	10'-6 3/4"	9'-1 3/4"	6'-1 13/16"	12-5/8 x 30	4 15/16	3 1/2	8'-0"	5'-0"	2'-0"	8 # 5	# 4	7.8	8.5			9'-0"	5'-0"	2'-6"	8 # 5	6.7
10N	32,700	1,300	12'-7 1/4"	10'-11"	7'-3 5/16"	12-3/4 x 36	5 21/32	4	8'-0"	5'-0"	2'-0"	8 # 5	# 4	7.8	8.5			9'-0"	5'-0"	2'-6"	8 # 5	6.7
11N	48,700	2,400	14'-7 7/8"	12'-8 5/16"	8-5 9/16"	12-7/8 x 42	7 1/16	5	9'-3"	5'-6"	2'-0"	8 # 6	# 4	9.4	10.2			10'-0"	5'-0"	2'-6"	8 # 6	7.3
12N	47,700	2,400	16'-8 3/8"	14'-5 1/2"	9'-7 11/16"	12-7/8 x 42	7 1/16	5	9'-3"	5'-6"	2'-0"	8 # 6	# 4	9.4	10.2			10'-0"	5'-0"	2'-6"	8 # 6	7.3
13N	62,200	4,000	18'-8 3/8"	16'-2 5/16"	10'-9 3/16"	12-7/8 x 42	7 1/16	5	9'-3"	6'-0"	2'-0"	8 # 7	# 4	10.7	11.4			10'-0"	6'-0"	3'-0"	8 # 7	11.0
14N	62,200	4,000	20'-9 3/8"	17'-11 5/16"	12'-0"	12-1 x 48	9 1/2	5 1/2	9'-3"	6'-0"	2'-0"	8 # 7	# 4	10.7	11.4			10'-0"	6'-0"	3'-0"	8 # 7	11.0
15N	97,000	8,500	22'-9 3/8"	19'-8 3/4"	13'-1 13/16"	12-1 x 48	9 1/2	5 1/2	11'-0"	6'-0"	2'-6"	16 # 8	# 4	13.2	14.6			12'-6"	6'-0"	3'-0"	12 # 8	12.9
16N	97,000	8,500	24'-9 3/8"	21'-5 9/16"	14'-3 11/16"	12-1 x 48	9 1/2	5 1/2	11'-0"	6'-0"	2'-6"	16 # 8	# 4	13.2	14.6			12'-6"	6'-0"	3'-0"	12 # 8	12.9

†LEG STRESS AND SHEAR VALUES ARE FOR ONE LEG.

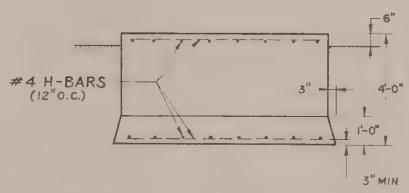
*CONCRETE QUANTITIES SHOWN ARE FOR THREE PIERS.



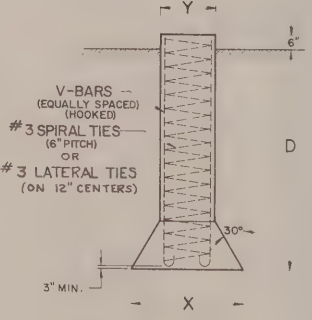




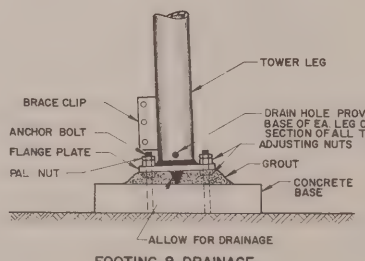
PIER & PAD



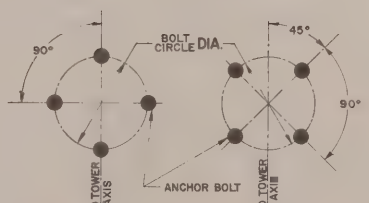
PAD



DRILL & BELL

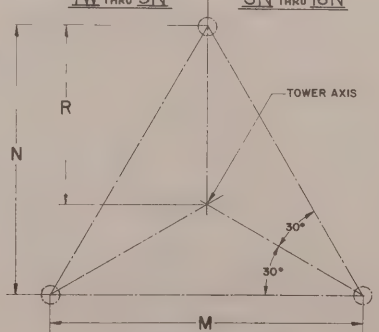


FOOTING & DRAINAGE DETAILS



NOTE: TOWER SECTIONS 1W THRU 5N

NOTE: TOWER SECTIONS 6N THRU 16N



FOUNDATION LAYOUT & ANCHOR BOLT ORIENTATIONS

GENERAL NOTES:

(1) CONCRETE, 3,000 P.S.I. MIN. ULTIMATE STRENGTH.

(2) ASTM A-615 GRADE 40 DEFORMED REBARS.

(3) FOUNDATION DESIGN BASED ON THE FOLLOWING:
- a. 4000 PSF SOIL FOR ALL PIER & PAD
- b. 4000 PSF SOIL FOR SECTIONS 7N-14N DRILL & BELL
- c. 5000 PSF SOIL FOR SECTIONS 15N & 16N DRILL & BELL.

(4) ALL FORMS MUST BE REMOVED FROM CONCRETE BEFORE PLACING COMPACTED BACKFILL.

(5) MINIMUM COVER ON ALL REBARS IS 2" EXCEPT AS NOTED.

(6) ALL ANCHOR BOLTS ASTM A-325 QUALITY.

(7) FOUNDATIONS DESIGNED FOR E.I.A. SOIL EXCEPT AS NOTED IN NO. (3). NORMAL

NO	DESCRIPTION	DATE	BY
R5	REV. FDN. DATA, ADDED LAT. TIES & NOTE 7	12-11-73	JER
R4	ADDED PAD FOUNDATION FOR SEC. 7N &		
	ADDED REINFORCING TO PAD FOUNDATIONS	2/19/73	GLS
R3	REBARS COVERAGE REVISED	2/18/72	GWA
R2	SECT. 3WN WAS 3W	7/6/71	GWA
R1	SECS. 4W & 5W REPL. BY 4N & 5N	5/5/71	GWA

REVISIONS

ROHN

TITLE: ALTERNATE FOUNDATIONS FOR MODEL SSV TOWERS N SERIES

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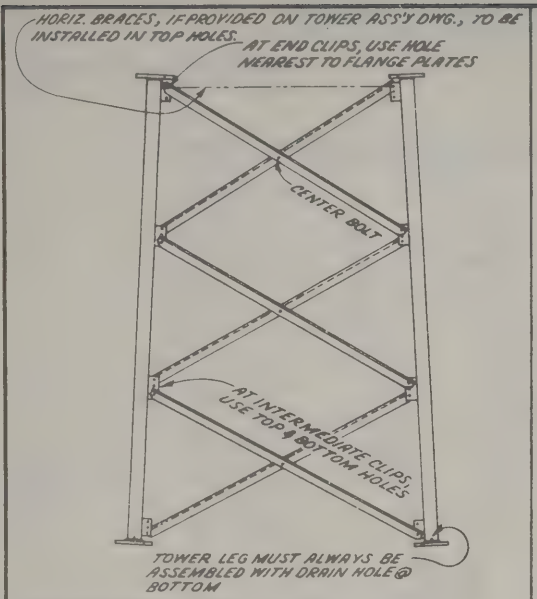
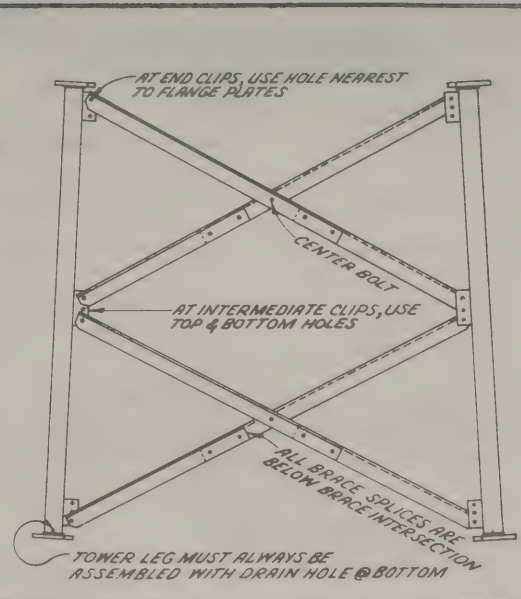
FILE NO

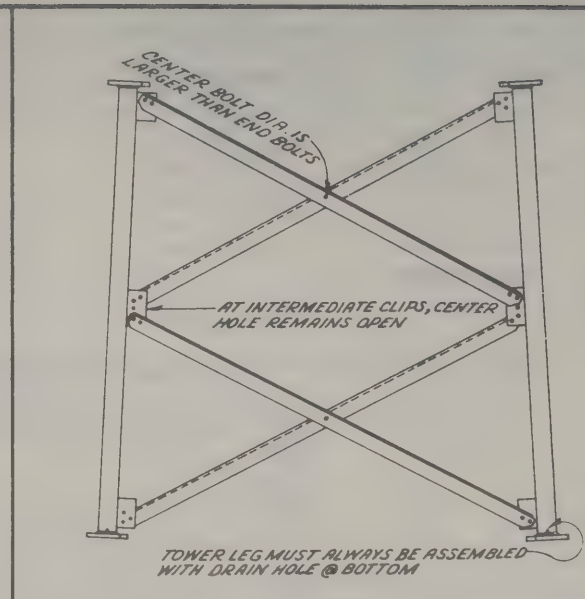
APPD.	NONE	SURVEY NO.	FINISH
DRAWN	R. ARCHANG	DATE 2-25-70	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES
CHKD.	[illegible]	DATE 3-27-70	TOLERANCES: DEC. ±, FRAC. ±, ANGLES ±
ENGR.	[illegible]	DATE 5-4-71	DWG NO. D-700300 R6


HORIZ. BRACES, IF PROVIDED ON TOWER ASS'Y DWG., TO BE INSTALLED IN TOP HOLES.
AT END CLIPS, USE HOLE NEAREST TO FLANGE PLATES
CENTER BOLT
AT INTERMEDIATE CLIPS, USE TOP & BOTTOM HOLES
TOWER LEG MUST ALWAYS BE ASSEMBLED WITH DRRIN HOLE @ BOTTOM

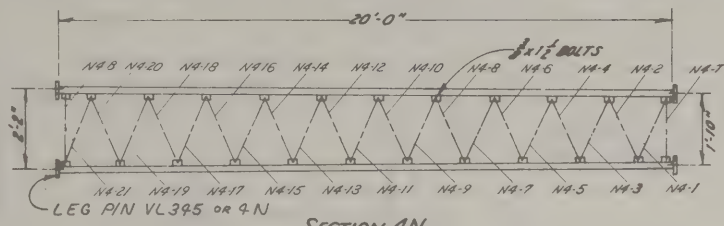
TYPICAL ONE-BOLT, ONE-PIECE BRACE CONNECTION


AT END CLIPS, USE HOLE NEAREST TO FLANGE PLATES
CENTER BOLT
AT INTERMEDIATE CLIPS, USE TOP & BOTTOM HOLES
ALL BRACE SPLICES ARE BELOW BRACE INTERSECTION
TOWER LEG MUST ALWAYS BE ASSEMBLED WITH DRAIN HOLE @ BOTTOM

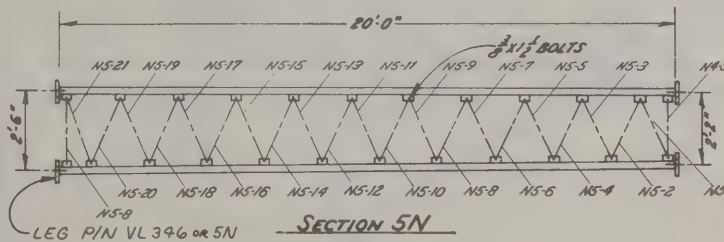
TYPICAL ONE-BOLT, TWO-PIECE BRACE CONNECTION DETAIL


CENTER BOLT DIA. IS LARGER THAN END BOLTS
AT INTERMEDIATE CLIPS, CENTER HOLE REMAINS OPEN
TOWER LEG MUST ALWAYS BE ASSEMBLED WITH DRAIN HOLE @ BOTTOM

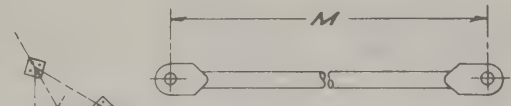
TYPICAL TWO-BOLT, ONE-PIECE BRACE CONNECTION DETAIL



SECTION 4N



SECTION 5N

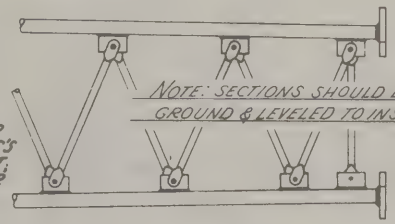


SECTION 4N	
PART NO.	M
N4-1	21 3/8"
N4-2	21 5/16"
N4-3	22 1/16"
N4-4	22 1/4"
N4-5	22 3/8"
N4-6	22 9/16"
N4-7	22 3/4"
N4-8	22 7/8"
N4-9	23 1/16"
N4-10	23 3/16"
N4-11	23 3/8"
N4-12	23 9/16"
N4-13	23 11/16"
N4-14	23 7/8"
N4-15	24 1/16"
N4-16	24 3/16"
N4-17	24 3/8"
N4-18	24 9/16"
N4-19	24 11/16"
N4-20	24 7/8"
N4-21	25 1/16"
N4-T	18 9/16"
N4-B	22 1/2"

SECTION 5N	
PART NO.	M
N5-1	24 3/16"
N5-2	25 1/4"
N5-3	25 7/16"
N5-4	25 5/8"
N5-5	25 7/8"
N5-6	25 15/16"
N5-7	26 1/8"
N5-8	26 1/4"
N5-9	26 7/16"
N5-10	26 5/8"
N5-11	26 3/4"
N5-12	26 15/16"
N5-13	27 1/8"
N5-14	27 5/16"
N5-15	27 7/16"
N5-16	27 5/8"
N5-17	27 13/16"
N5-18	28"
N5-19	28 1/8"
N5-20	28 5/16"
N5-21	28 1/2"

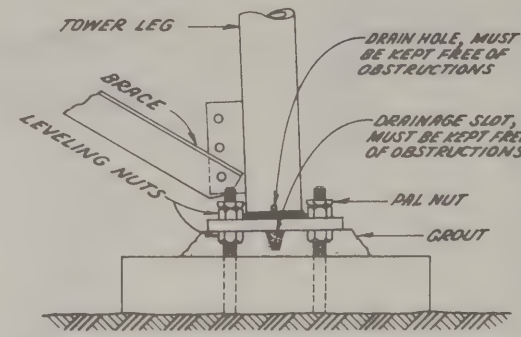
ENLARGED 4N & 5N BRACING DETAILS

NOTE: BRACING DETAILS FOR ALL 4N & 5N STRAIGHT SEC'S IS SAME AS SHOWN AT RIGHT, REFER TO ERECTION DWG. FOR BRACE PIN'S



NOTE: SECTIONS SHOULD BE ASSEMBLED ON EVEN GROUND & LEVELED TO INSURE STRAIGHTNESS

IMPORTANT: LEG PART NO. IS STAMPED AT BOTTOM OF BASE FLANGE PLATE OF EACH SECTION LEG.



GROUTING & DRAINAGE DETAILS

NO	DESCRIPTION	DATE	BY
R3	REVISED MK. NO'S. TO PIN'S & ADDED LEG PIN'S.	5-19-77	R.L.H.
R2	ADDED ASSEMBLY NOTE	2-3-75	Q.H.
R1	REVISED GENERAL LOCATION OF NOTES & MK NOS	7-10-74	Q.H.

REVISIONS

ROHN® MANUFACTURING
DIVISION OF MIRACO

TITLE: BRACING, GROUTING, & DRAINAGE DATA
FOR: MODEL S.S.V. TOWERS

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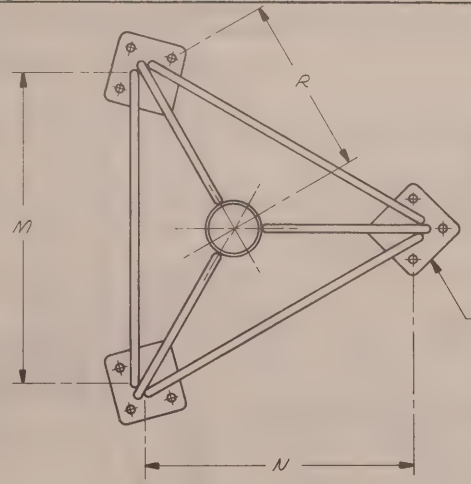
FILE NO

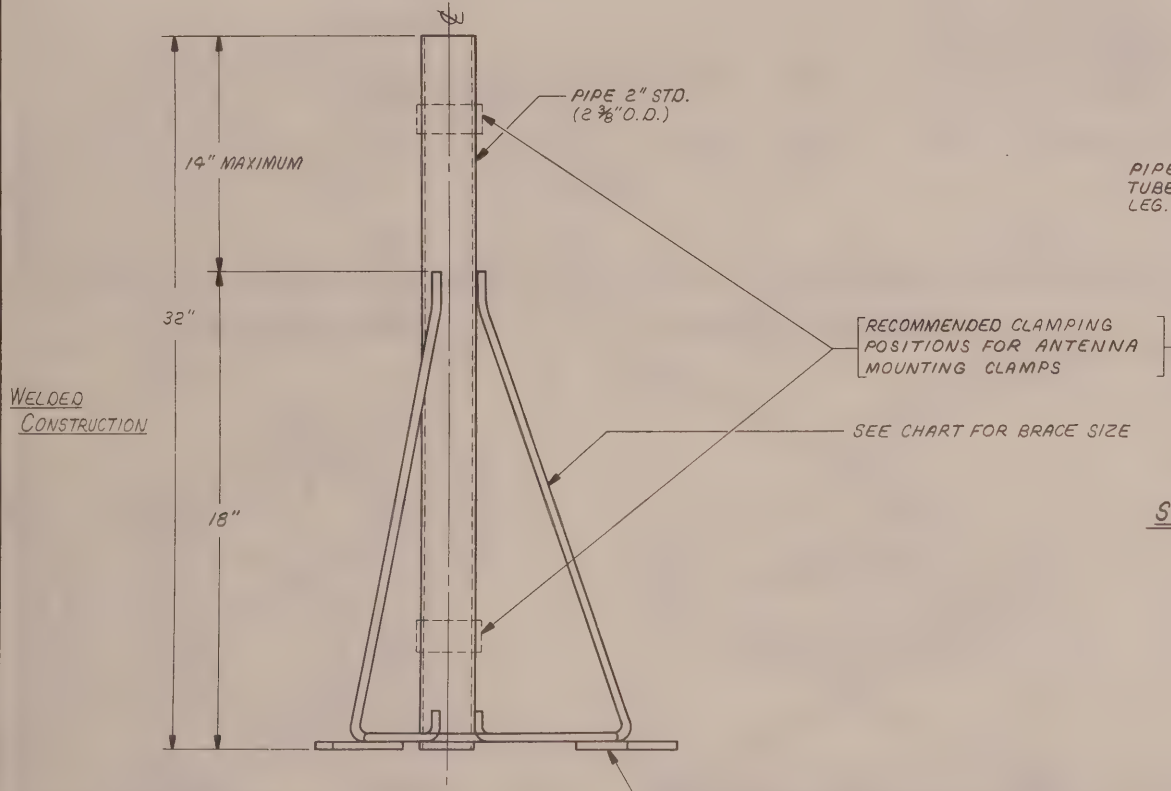
SCALE	MATERIAL	FINISH	WT.
~			

DWN BY O.H.	DATE 2-3-72	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES
SUPV'R [illegible]	DATE 3-6-72	TOLERANCES: DEC ± FRAC ± ANGLES ±
APP'D ENGR'G CWJ	DATE 3-8-72	DWG NO SK-720305, R3
APP'D SALES R.A.K.	DATE 3-10-72	

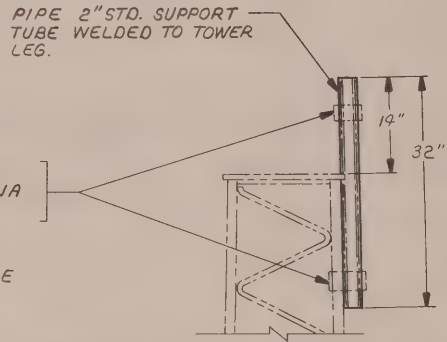
CITY BLUE PRINT 1000H 2-73 48181+
PRINTED IN U.S.A.



TAPERED TOP DETAILS						
SEC. NO.	MK. NO.	M	N	R	FLANGE ℙ SIZE	BRACE SIZE
1W	1-TT	1'-2"	1'-0 1/8"	0'-8 1/16"	3 x 3 x 3/8	7/16" Ø SOLID ROD
2W	1-TT	1'-2"	1'-0 1/8"	0'-8 1/16"	3 x 3 x 3/8	7/16" Ø SOLID ROD
3WN	3-TT	1'-6"	1'-3 3/16"	0'-10 3/8"	3 x 3 x 3/8	7/16" Ø SOLID ROD
4N	4-TTN	1'-10"	1'-7 1/16"	1'-0 11/16"	4 x 4 x 1/2	7/16" Ø SOLID ROD
5N	5-TTN	2'-2"	1'-10 1/2"	1'-3"	4 1/2 x 4 1/2 x 5/8	7/16" Ø SOLID ROD
5N-STR	6-TT	2'-6"	2'-2"	1'-5 5/16"	4 1/2 x 4 1/2 x 5/8	5/8" Ø SOLID ROD


PIPE 2" STD.
(2 3/8" O.D.)
14" MAXIMUM
32"
18"
WELDED CONSTRUCTION
RECOMMENDED CLAMPING POSITIONS FOR ANTENNA MOUNTING CLAMPS
SEE CHART FOR BRACE SIZE
DESIGN BASED ON THRUST OF 500# @ CLAMPING POSITION
METAL STAMP MARK NO. ON BOTTOM OF FLANGE PLATE BEFORE GALVANIZING.

TAPERED TOP DETAILS



SUPPORT TUBE FOR APL SECTIONS-DETAIL

No.	Revision Description	Date	By
R6	REDRAWN	1-3-77	MDI

Unarco-Rohn
Division of Unarco Industries, Inc.

Title: SUPPORT TUBE DETAILS FOR S. S. V. TOWERS

Scale: NONE	Unless otherwise specified, dimensions are given in inches. Tolerances	
Drawn by: MDI Date: 1-3-77	Decimals ±	Fractions ±
Checked by: ORH Date: 1-4-77	Angles ±	
Approved by Engineering: CW Date: 1-5-77	Material	Finish
Approved by Production: [illegible] Date: 1-7-77	Weight	
Approved by Sales: PAH Date: 1-11-77	File Number	Drawing Number: SK-670407R6

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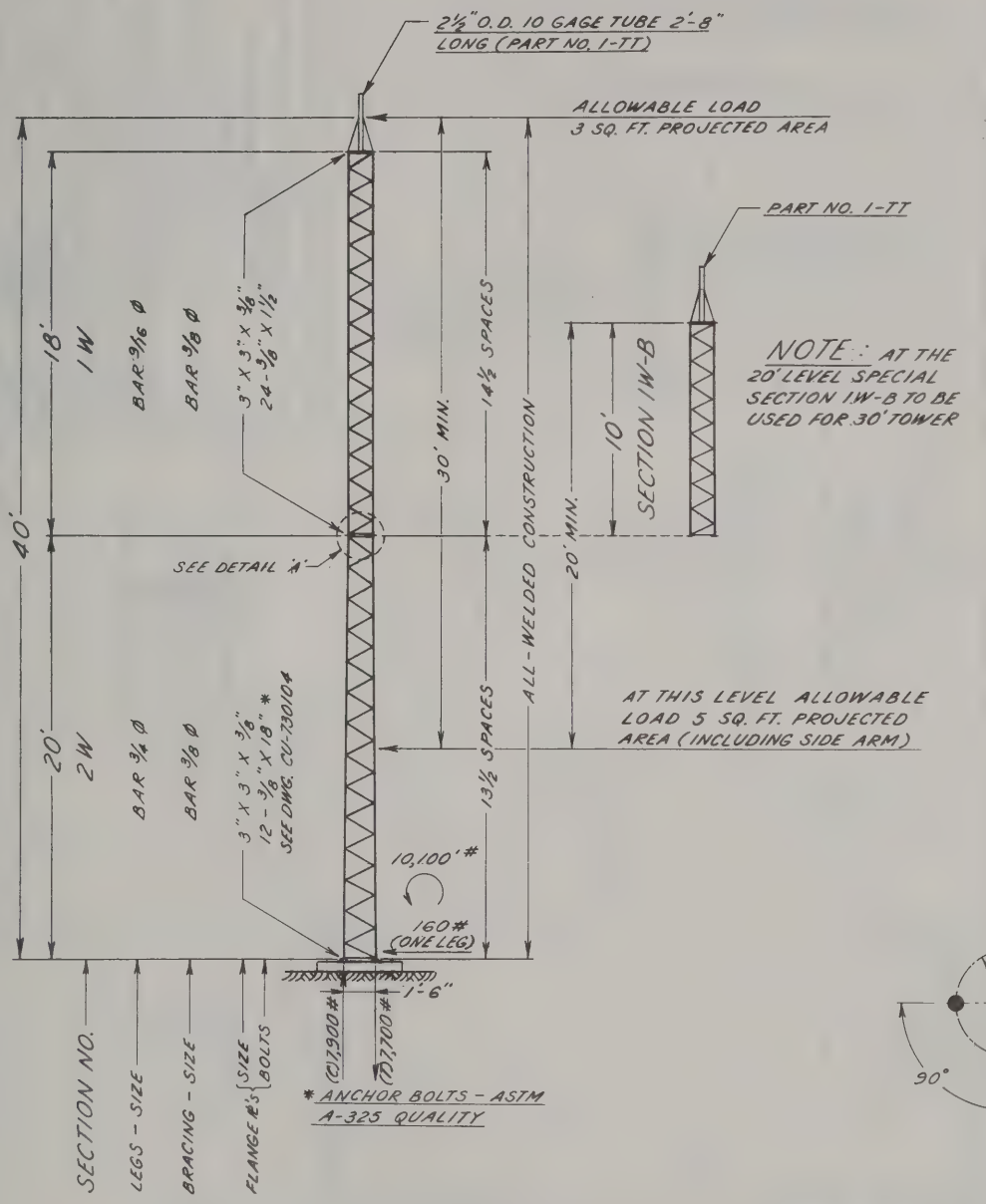
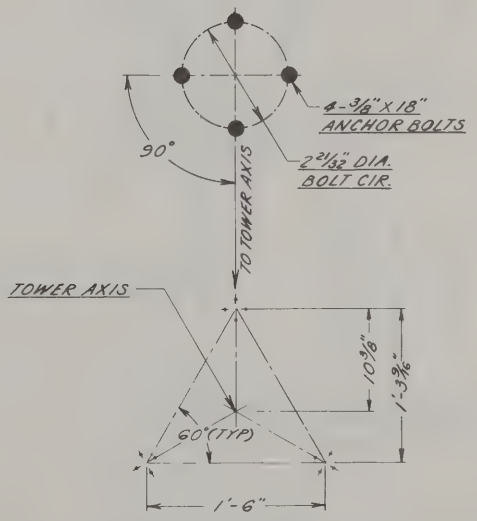


TOWER ELEVATION

DETAIL A



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R4)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF EACH SECTION.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.

NO.	DESCRIPTION REVISIONS	DATE	BY

ROHN® MANUFACTURING
DIVISION OF

TITLE 30' & 40' MODEL SSV TOWER 30 P.S.F. E.I.A.

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FILE NO.

DWG. NO. CU-721109

SCALE NONE | FINISH | MATERIAL | BY

DWN BY GLS | DATE 1/31/73

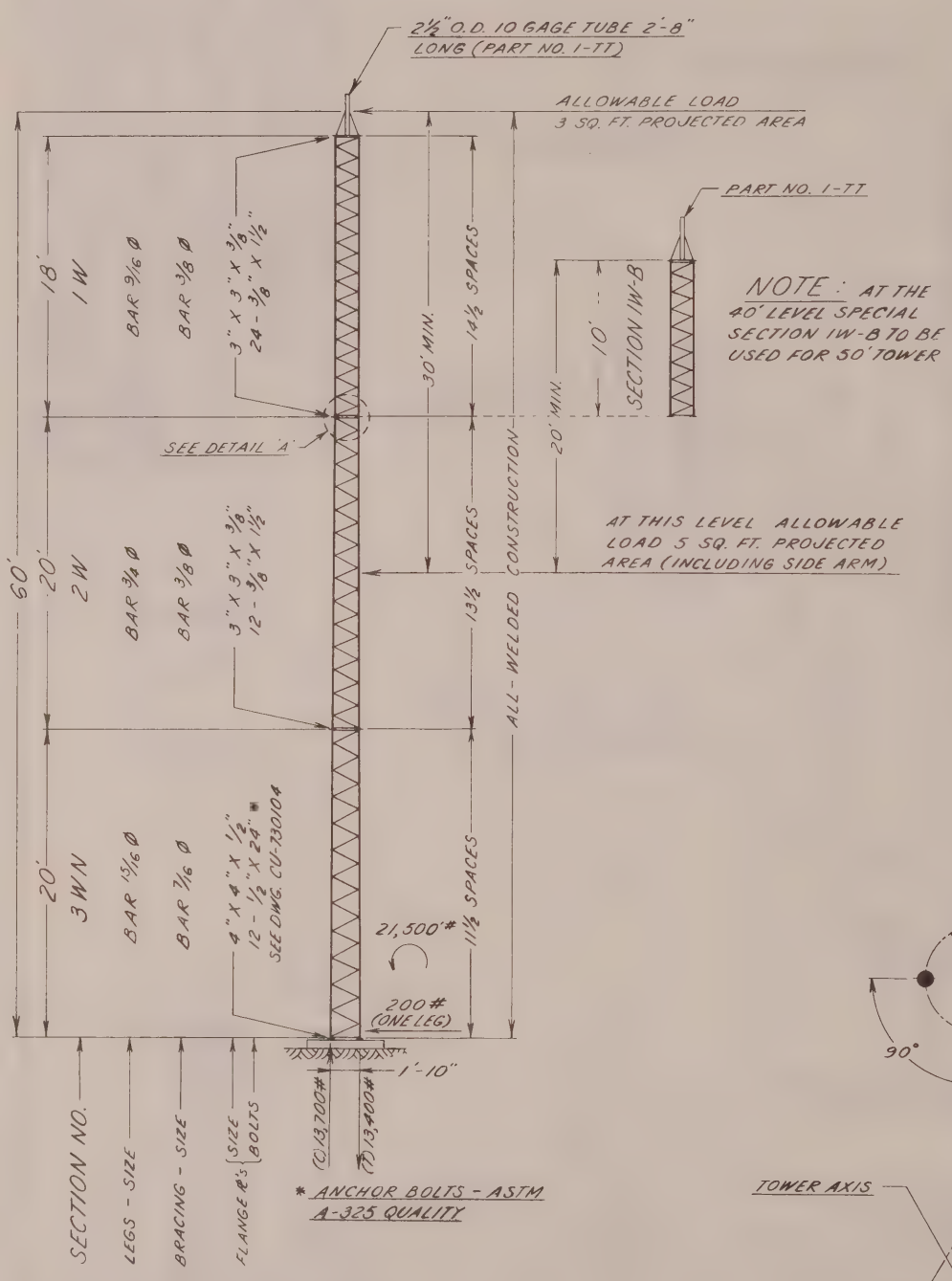
CKD BY FJS | DATE 2/12/73

APP'D BY CW | DATE 2/19/73

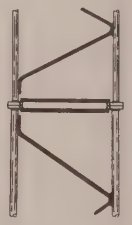
APP'D BY [illegible] | DATE 4/6/73

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES

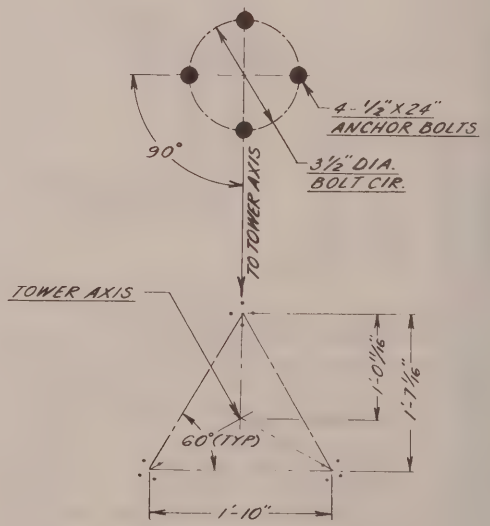
TOLERANCES: DEC ±, FRAC ±, ANGLES ±



TOWER ELEVATION



DETAIL A



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300 Rd)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF EACH SECTION.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF

TITLE: 50' & 60' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO.

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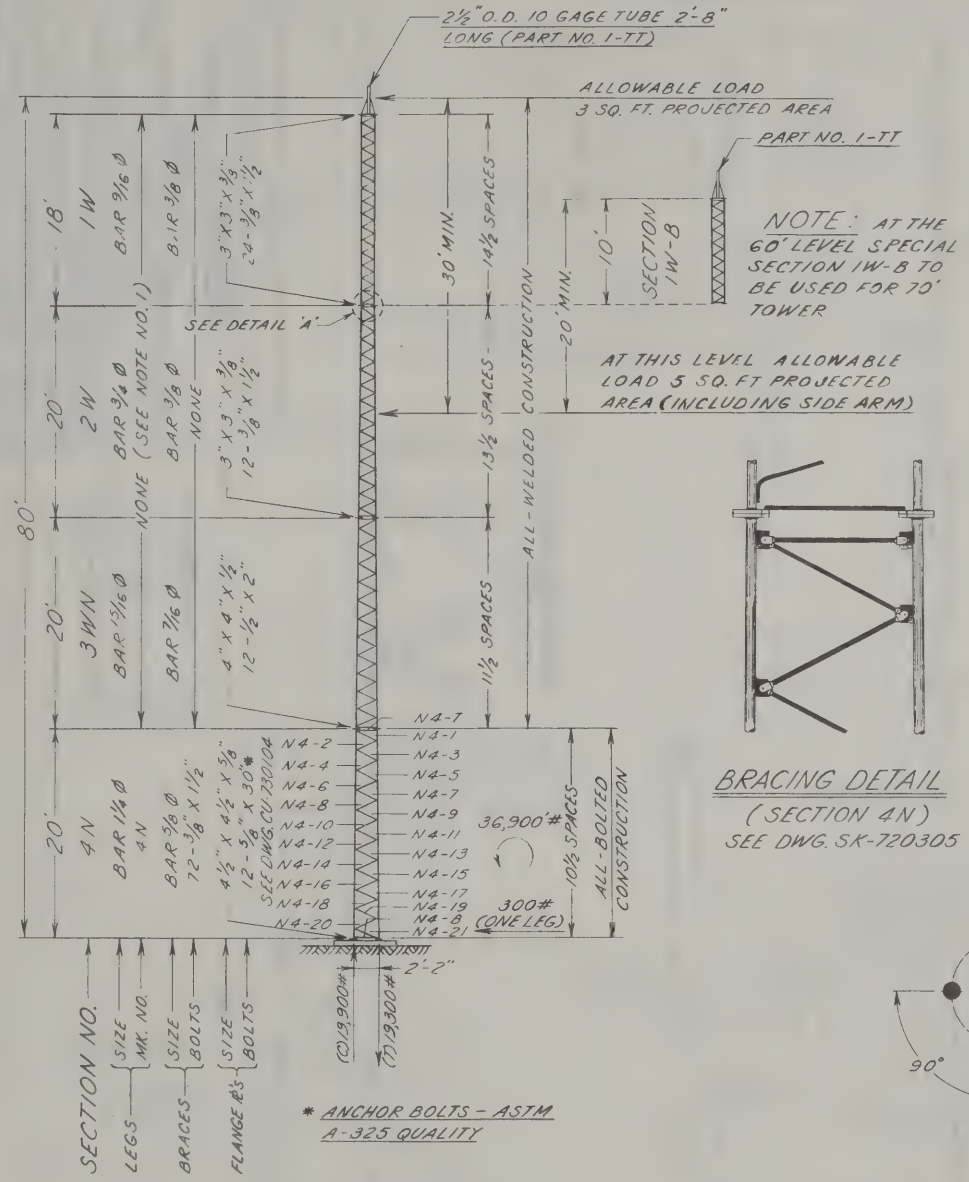
SCALE: NONE | MATERIAL | FINISH | WT

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.

TOLERANCES: DEC ± | FRAC ± | ANGLES ±

DWG. NO. CU-72110

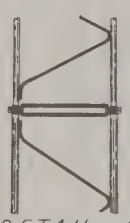
DWN BY	GLS	DATE 1/31/73
CK'D BY	T.S.	DATE 2/12/73
APP'D (MFG)	CW	DATE 2/19/73
APP'D (CUST)		DATE 4/16/73



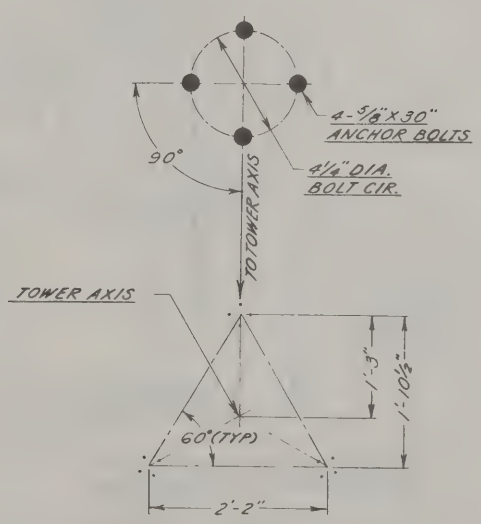
* ANCHOR BOLTS - ASTM A-325 QUALITY

TOWER ELEVATION

BRACING DETAIL
(SECTION 4N)
SEE DWG. SK-720305



DETAIL A



BASE DIMENSIONS
(FOR FOUNDATION DETAILS SEE DWG. D-700300 Rd)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
6. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.

NO.	DESCRIPTION REVISIONS	DATE	BY

ROHN® MANUFACTURING
DIVISION OF Unarco

TITLE: 70' & 80' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO.

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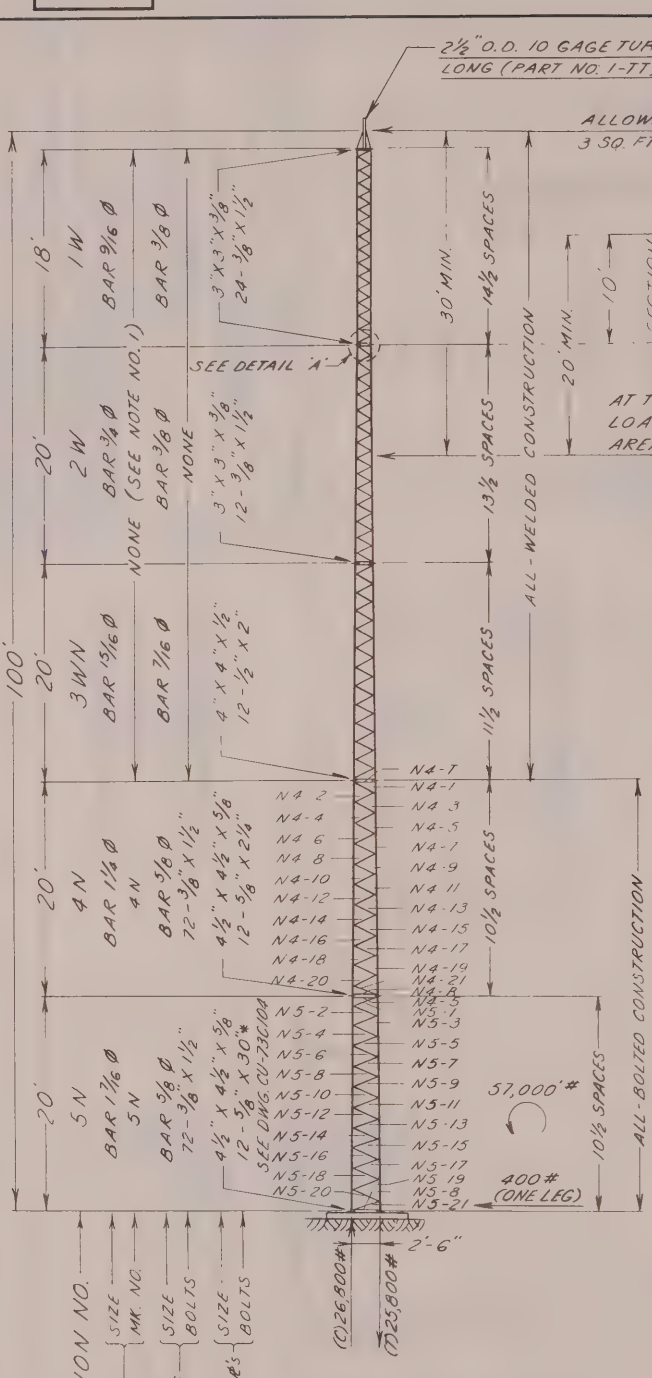
SCALE: NONE	DWN. BY GLS	DATE 3/31/72	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES
	CHD. BY T.S.	DATE 2/12/73	TOLERANCES: DEC ± FRAC ± ANGLES ±
	APVD. ENGR. LO	DATE 2/14/73	
	APVD. SALES GR	DATE 4/6/73	

DWG. NO. CU-721111

CITY BLUE PRINT 10804-378-48191

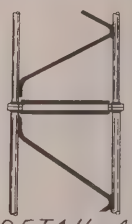

2½" O.D. 10 GAGE TUBE 2'-8" LONG (PART NO. 1-TT)
ALLOWABLE LOAD 3 SQ. FT. PROJECTED AREA
PART NO. 1-TT
NOTE: AT THE 80' LEVEL SPECIAL SECTION 1W-B TO BE USED FOR 90' TOWER
SECTION 1W-B
10'
20' MIN.
30' MIN.
14½ SPACES
13½ SPACES
11½ SPACES
10½ SPACES
ALL-WELDED CONSTRUCTION
ALL-BOLTED CONSTRUCTION
AT THIS LEVEL ALLOWABLE LOAD 5 SQ. FT. PROJECTED AREA (INCLUDING SIDE ARM)
SEE DETAIL 'A'
18' 1W BAR 9/16 Ø 3"X3"X3/8" 24-3/8"X1½"
20' 2W BAR ¾ Ø BAR 3/8 Ø NONE (SEE NOTE NO. 1) 3"X3"X3/8" 12-3/8"X1½"
20' 3W/N BAR 15/16 Ø BAR 7/16 Ø NONE 4"X4"X½" 12-½"X2"
20' 4N BAR 1¼ Ø BAR 5/8 Ø 12-3/8"X1½" 4½"X4½"X5/8" 12-5/8"X2¼"
20' 5N BAR 1 3/16 Ø BAR 5/8 Ø 12-3/8"X1½" 4½"X4½"X5/8" 12-5/8"X30"* SEE DWG CU-730104
100'
N4-1 N4-2 N4-3 N4-4 N4-5 N4-6 N4-7 N4-8 N4-9 N4-10 N4-11 N4-12 N4-13 N4-14 N4-15 N4-16 N4-17 N4-18 N4-19 N4-20 N4-21
N5-1 N5-2 N5-3 N5-4 N5-5 N5-6 N5-7 N5-8 N5-9 N5-10 N5-11 N5-12 N5-13 N5-14 N5-15 N5-16 N5-17 N5-18 N5-19 N5-20 N5-21
57,000'#
400# (ONE LEG)
2'-6"
(C) 26,800#
(T) 25,800#
SECTION NO.
LEGS — SIZE — MK. NO.
BRACES — SIZE — BOLTS
FLANGE #'S — SIZE — BOLTS

* ANCHOR BOLTS – ASTM A-325 QUALITY

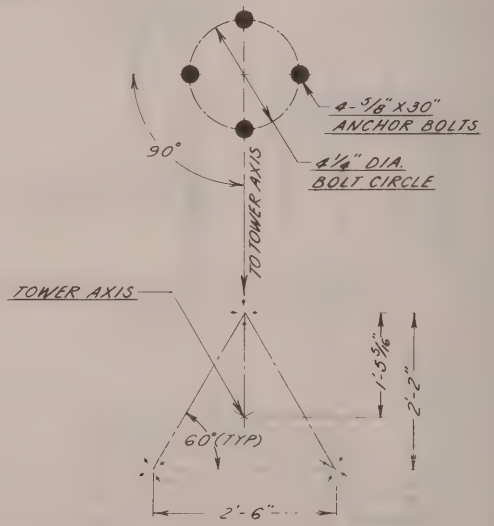
TOWER ELEVATION

BRACING DETAIL

(SECTIONS 4N & 5N)
SEE DWG. SK-720305



DETAIL A



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R4)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
6. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF

TITLE 90' & 100' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO.

DWG. NO. CU-721112

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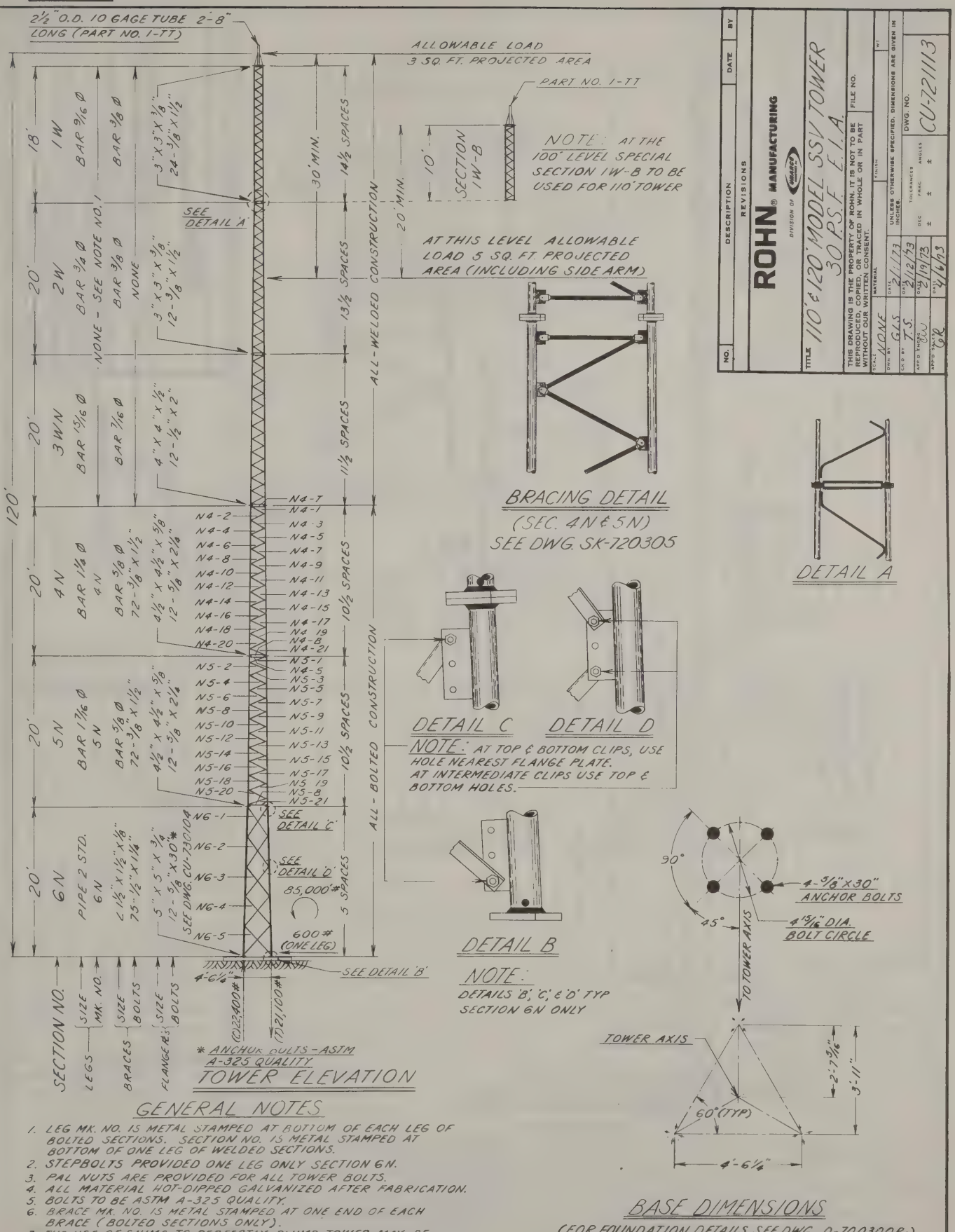
SCALE	MATERIAL	FINISH	WT.
NONE			

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES

TOLERANCES: DEC ± ; FRAC ± ; ANGLES ±

DWN. BY	GLS	DATE 1/31/73
CH'D BY	T.S.	DATE 2/12/73
APP'D BY	CW	DATE 2/19/73
APP'D BY		DATE 4/16/73

CITY BLUE PRINT (800) 2-75 #8191



TOWER ELEVATION

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. STEPBOLTS PROVIDED ONE LEG ONLY SECTION 6N.
3. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
4. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
5. BOLTS TO BE ASTM A-325 QUALITY.
6. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
7. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.
8. WHERE DRAINAGE IS REQ'D., A DRAIN HOLE IS PROVIDED AT BASE OF EACH LEG OF THE SECTION.

BRACING DETAIL
(SEC. 4N & 5N)
SEE DWG. SK-720305

DETAIL A

DETAIL C

DETAIL D

NOTE: AT TOP & BOTTOM CLIPS, USE HOLE NEAREST FLANGE PLATE. AT INTERMEDIATE CLIPS USE TOP & BOTTOM HOLES.

DETAIL B

NOTE:
DETAILS 'B', 'C', & 'D' TYP SECTION 6N ONLY

BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R4)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF Contech

TITLE 110' & 120' MODEL SSV TOWER 30 PSF E.I.A.

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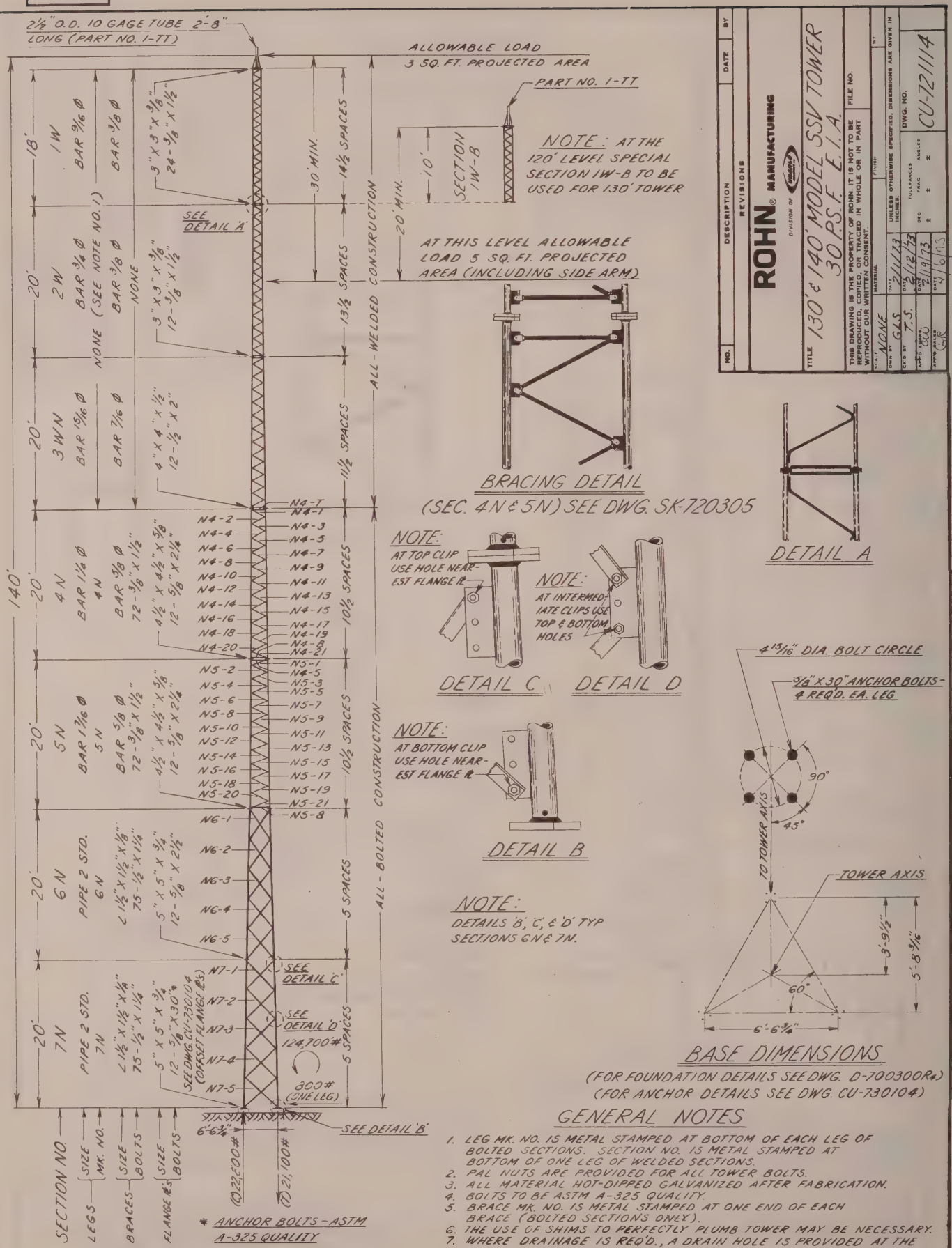
FILE NO.

FINISH: NONE
MATERIAL: NONE
DWN. BY: GLS DATE: 2/1/73
CHD. BY: T.S. DATE: 2/12/73
APPD. ENGR. DATE: 2/19/73
APPD. MGR. DATE: 4/1/73

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES
TOLERANCES: DEC ±, FRAC ±, ANGLES ±

DWG. NO. CU-721113



TOWER ELEVATION

BRACING DETAIL
(SEC. 4N & 5N) SEE DWG. SK-720305

DETAIL A

DETAIL C DETAIL D

DETAIL B

NOTE:
DETAILS 'B', 'C', & 'D' TYP SECTIONS 6N & 7N.

BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R4)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
6. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.
7. WHERE DRAINAGE IS REQ'D., A DRAIN HOLE IS PROVIDED AT THE BASE OF EACH LEG OF THE SECTION.
8. STEP BOLTS PROVIDED ONE LEG ONLY SECTIONS 6N & 7N.

NO. | DESCRIPTION | DATE | BY
REVISIONS

ROHN® MANUFACTURING
DIVISION OF Commercial Metals

TITLE: 130' & 140' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO.

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SCALE: NONE | MATERIAL | FINISH | WT.

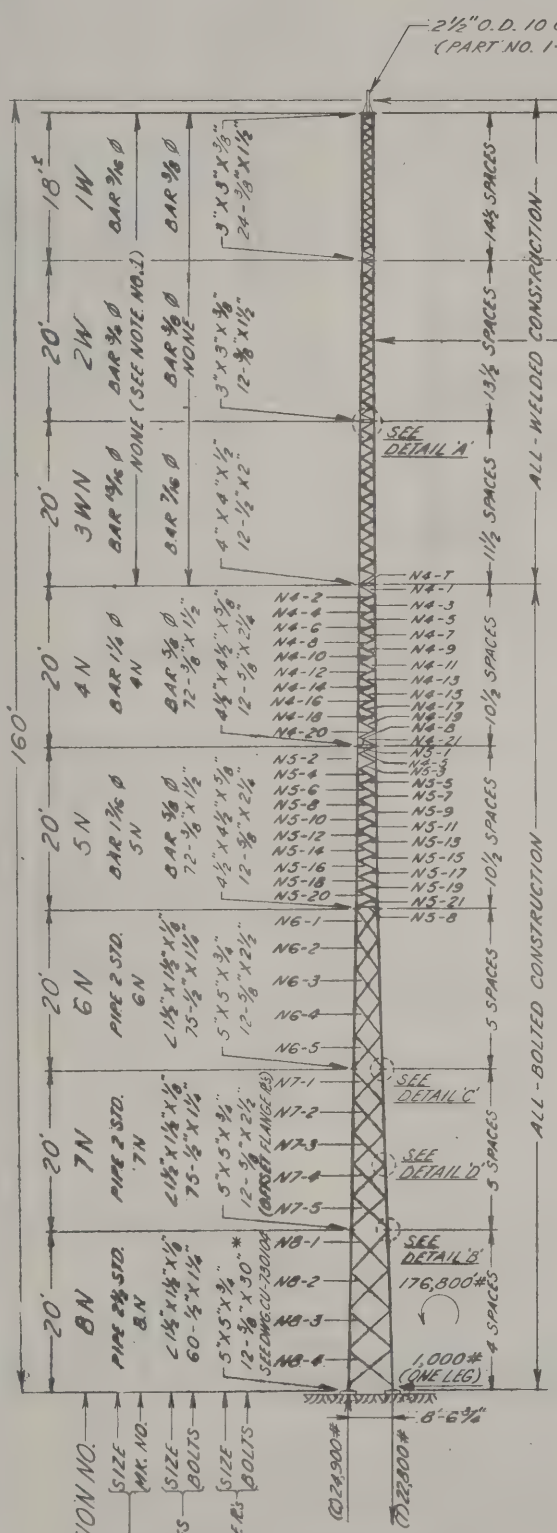
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.

TOLERANCES: DEC ± | FRAC ± | ANGLES ±

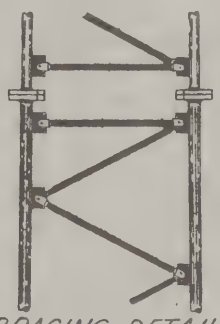
DWG. NO. CU-721114

	NAME	DATE
DWN BY	G.L.S.	2/11/73
CKD BY	T.S.	2/12/73
APVD UNDER CONTRACT	C.W.	2/19/73
APVD PLANT	C.R.	4/6/73

DOM 2-73 40191

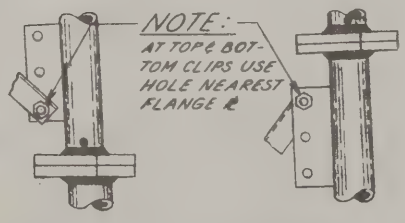


TOWER ELEVATION



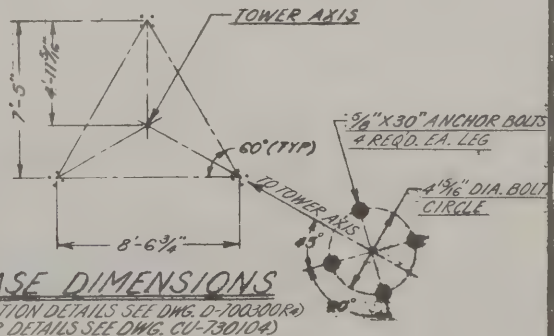
BRACING DETAIL (SEC. 4N & 5N) SEE DWG. SK-720305

DETAIL A



DETAIL B DETAIL C DETAIL D

(TYP. SECTIONS 6N THRU 8N)



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R2)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
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4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
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7. WHERE DRAINAGE IS REQ'D., A DRAIN HOLE IS PROVIDED AT THE BASE OF EACH LEG OF THE SECTION.
8. STEP BOLTS PROVIDED ONE LEG ONLY SECTIONS 6N THRU 8N.

NO.	DESCRIPTION REVISIONS	DATE	BY

ROHN® MANUFACTURING
DIVISION OF

TITLE: 150' & 160' MODEL SSV TOWER 30 P.S.F. E.I.A.

DWG. NO. CU-721115

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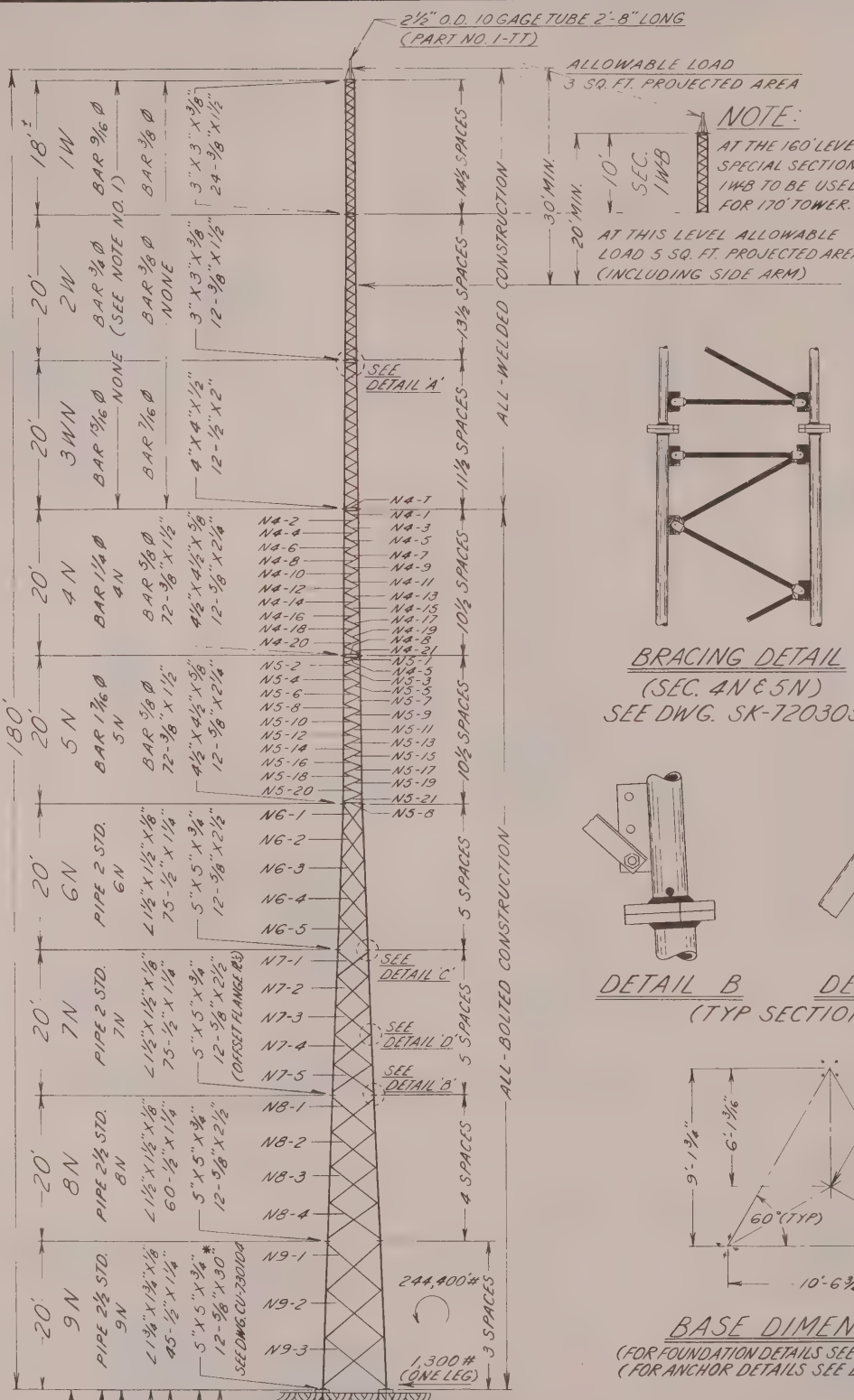
FILE NO.

SCALE NONE | MATERIAL | FINISH | WT.

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES. TOLERANCES: DEC ± | FRAC ± | ANGLES ±

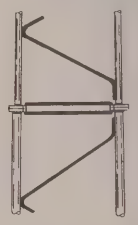
	NAME	DATE
DWN. BY	GLS	2/11/73
CHD BY	TS.	2/12/73
APPD BY	DW	2/14/73
APPD BY		4/1/73



* ANCHOR BOLTS - ASTM A-325 QUALITY

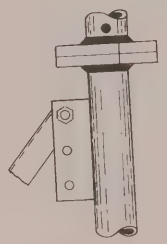
TOWER ELEVATION

BRACING DETAIL
(SEC. 4N & 5N)
SEE DWG. SK-720305

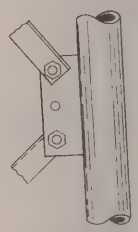


DETAIL A

DETAIL B

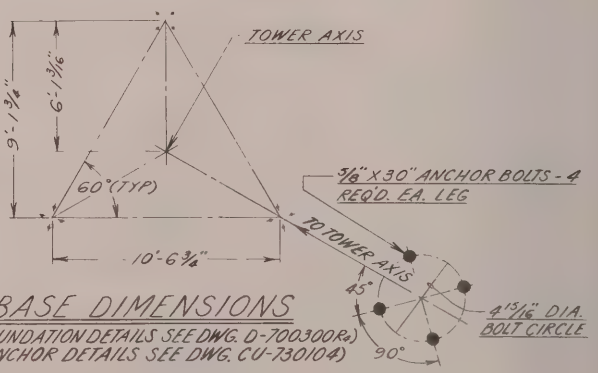


DETAIL C



DETAIL D

(TYP SECTIONS 6N THRU 9N)



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300 R2)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
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7. WHERE DRAINAGE IS REQ'D., A DRAIN HOLE IS PROVIDED AT THE BASE OF EACH LEG OF THE SECTION.
8. STEP BOLTS PROVIDED ONE LEG ONLY SECTIONS 6N THRU 9N.

NO.	DESCRIPTION REVISIONS	DATE	BY

ROHN® MANUFACTURING
DIVISION OF UNARCO INDUSTRIES

TITLE: 170'ε 180' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO.

DWG NO. CU-721116

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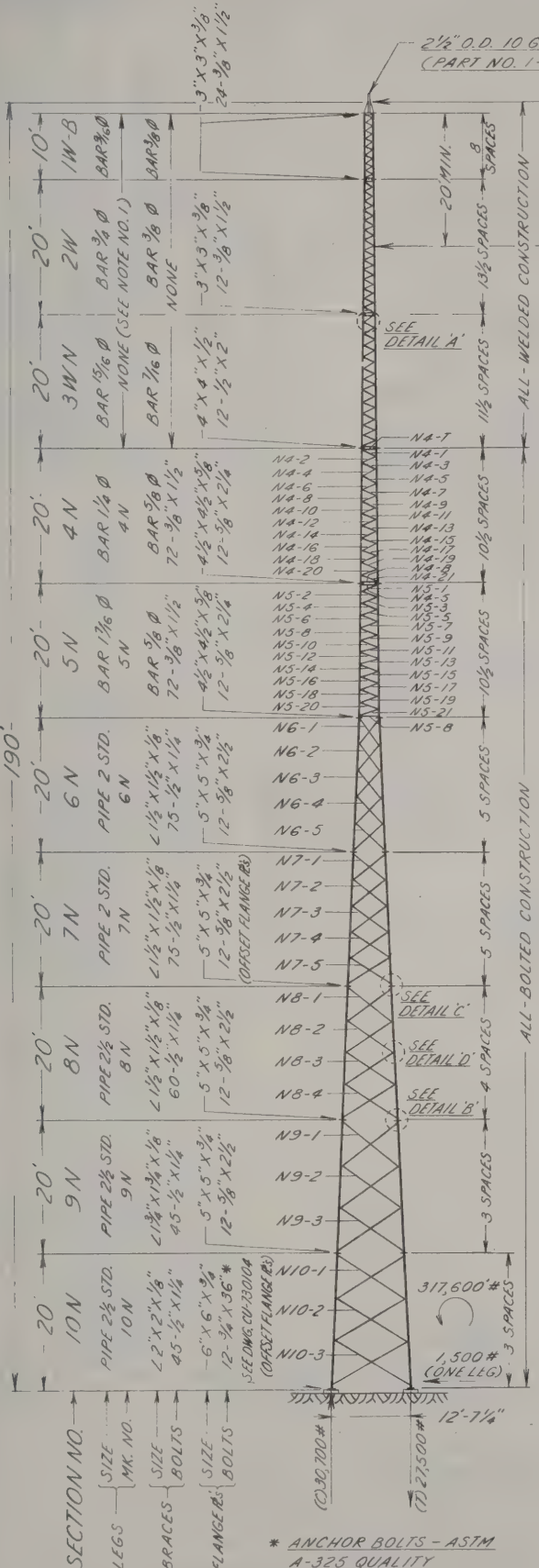
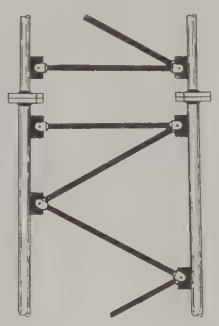
SCALE	NONE	FINISH	WT
DWN BY	GLS	DATE 7/10/73	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D BY	T.S.	DATE 7/13/73	TOLERANCES DEC ± FRAC ± ANGLES ±
APP'D ENGR.	CWO	DATE 7/19/73	
APP'D SALES		DATE	

PRINTED IN U.S.A.

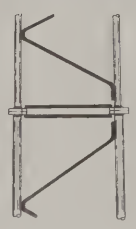
CITY BLUE PRINT 1008H 2-72 48181



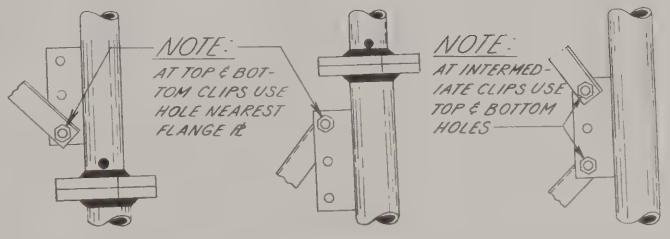
TOWER ELEVATION



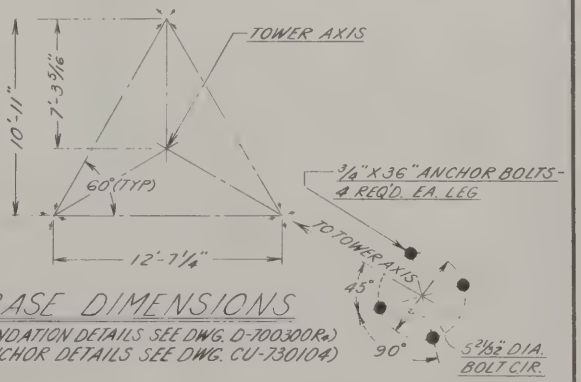
BRACING DETAIL
(SEC. 4N & 5N)
SEE DWG. SK-720305



DETAIL A



DETAIL B DETAIL C DETAIL D
(TYP SECTIONS 6N THRU 10N)



BASE DIMENSIONS
(FOR FOUNDATION DETAILS SEE DWG. D-700300R*)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
6. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.
7. WHERE DRAINAGE IS REQD., A DRAIN HOLE IS PROVIDED AT THE BASE OF EACH LEG OF THE SECTION.
8. STEP BOLTS PROVIDED ONE LEG ONLY SECTIONS 6N THRU 10N.

ROHN® MANUFACTURING
DIVISION OF CHANCE

TITLE: 190' MODEL SSV TOWER 30 P.S.F. E.I.A.

FILE NO. CU-721117

DWG. NO.

SCALE: NONE | DWN. BY: GLS | CK'D BY: FS | APP'D BY: JW | MATERIAL | FINISH | WT.

DATE: 12/8/73 | 2/3/73 | 2/19/73

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES. TOLERANCES: DEC. . FRAC. . ANGLES .

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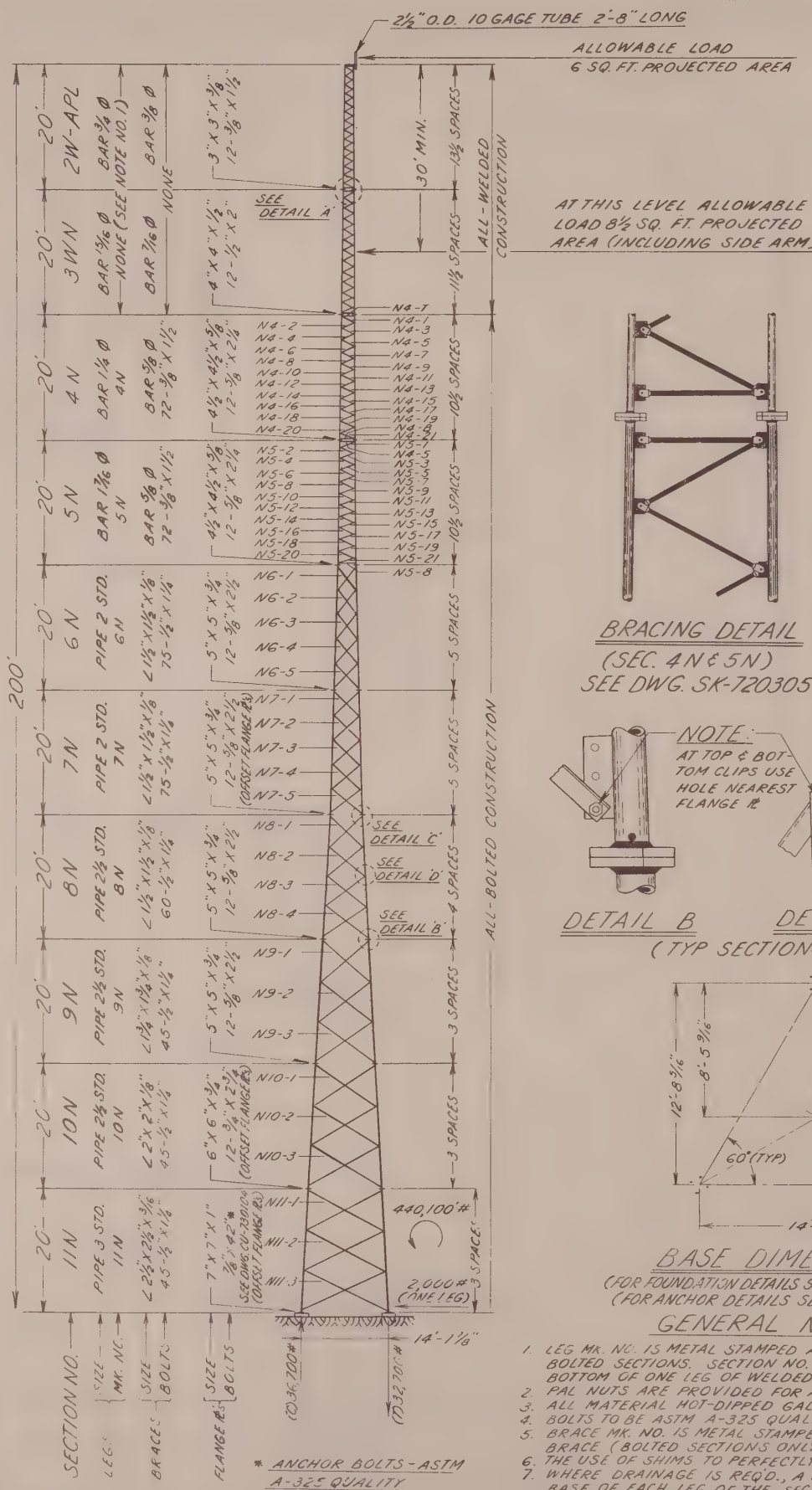
NO.	DESCRIPTION REVISIONS	DATE	BY

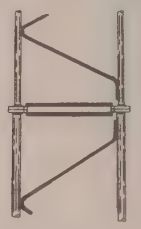
PRINTED IN U.S.A.

CITY BLUE PRINT 10004 2-73 48181



TOWER ELEVATION

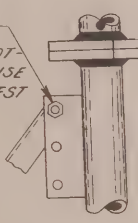
BRACING DETAIL
(SEC. 4N & 5N)
SEE DWG. SK-720305



DETAIL A

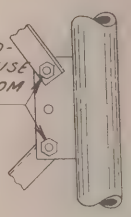
DETAIL B

NOTE: AT TOP & BOTTOM CLIPS USE HOLE NEAREST FLANGE ℄



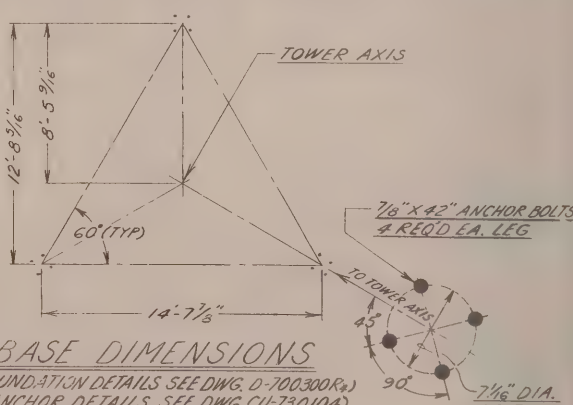
DETAIL C

NOTE: AT INTERMEDIATE CLIPS USE TOP & BOTTOM HOLES



DETAIL D

(TYP SECTIONS 6N THRU 11N)



BASE DIMENSIONS

(FOR FOUNDATION DETAILS SEE DWG. D-700300R₈)
(FOR ANCHOR DETAILS SEE DWG. CU-730104)

GENERAL NOTES

1. LEG MK. NO. IS METAL STAMPED AT BOTTOM OF EACH LEG OF BOLTED SECTIONS. SECTION NO. IS METAL STAMPED AT BOTTOM OF ONE LEG OF WELDED SECTIONS.
2. PAL NUTS ARE PROVIDED FOR ALL TOWER BOLTS.
3. ALL MATERIAL HOT-DIPPED GALVANIZED AFTER FABRICATION.
4. BOLTS TO BE ASTM A-325 QUALITY.
5. BRACE MK. NO. IS METAL STAMPED AT ONE END OF EACH BRACE (BOLTED SECTIONS ONLY).
6. THE USE OF SHIMS TO PERFECTLY PLUMB TOWER MAY BE NECESSARY.
7. WHERE DRAINAGE IS REQ'D., A DRAIN HOLE IS PROVIDED AT THE BASE OF EACH LEG OF THE SECTION.
8. STEP BOLTS PROVIDED ONE LEG ONLY SECTIONS 6N THRU 11N.

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING DIVISION OF Commercial Metals

TITLE: 200' MODEL SSV TOWER 30 P.S.F. E.I.A.

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FILE NO.

DWG. NO. CU-721118

SCALE: NONE | MATERIAL | FINISH

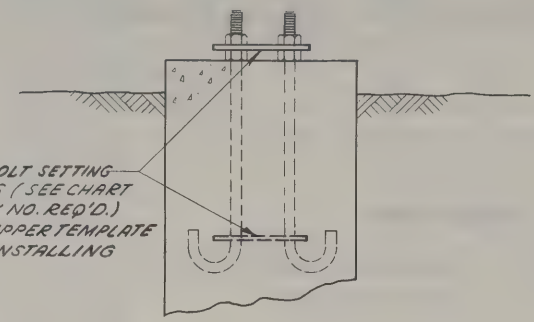
DWN. BY	GLS	DATE 2/22/73
SCD. BY	TS	DATE 3/13/73
APPD. CHIEF ENG.	CJJ	DATE 3/19/73
APPD. MFG.	[illegible]	DATE 4/6/73

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.

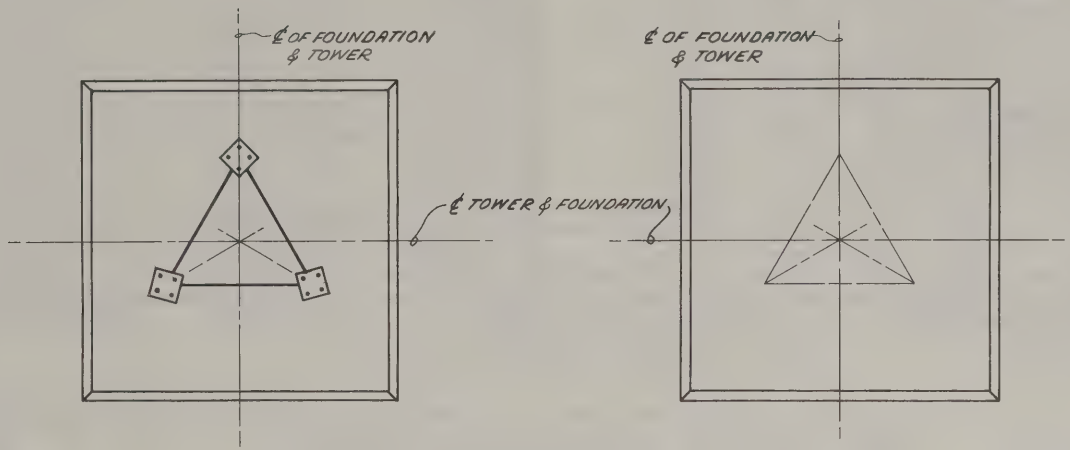
TOLERANCES: DEC ± | FRAC ± | ANGLES ±

BOLT TEMPLATE INFORMATION

TEMPLATE MK. NO.	PART NO.	ANCHOR BOLTS	BASE FLANGE SIZE	TOWER BASE SECTION (SEE TOWER ASS'Y)
VL-25	6N-AB	5/8 X 30"	5 X 5 X 3/4	6N, 7N, 8N, 9N, 9NH
VL-26	10N-AB	3/4 X 36"	6 X 6 X 3/4	10N, 10NH
VL-27	11N-AB	7/8 X 42"	7 X 7 X 1	11N, 12N, 12NH, 13N, 13NH
VL-28	14N-AB	1 X 48"	9 1/2 X 9 1/2 X 1 1/4	14NH, 14N, 15N, 16N
VL-28	15NH-AB	1 X 72"	9 1/2 X 9 1/2 X 1 1/4	15NH & 16NH

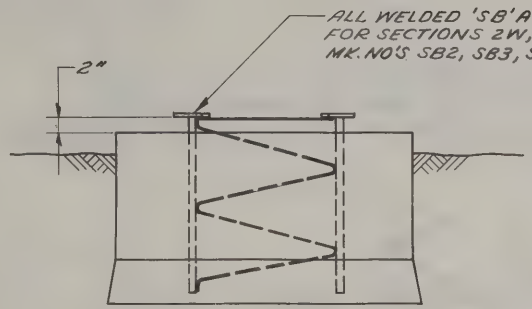


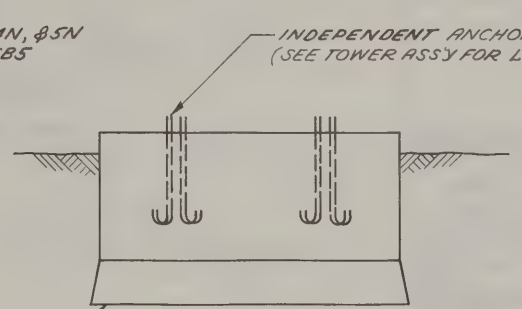
ANCHOR BOLT SETTING TEMPLATES (SEE CHART FOR MARK NO. REQ'D.) REMOVE UPPER TEMPLATE BEFORE INSTALLING TOWER.



NOTES

1. IT IS THE RESPONSIBILITY OF THE FOUNDATION CONTRACTOR TO VERIFY THAT THE CORRECT SETTING TEMPLATE & FOUNDATION DWG. ARE BEING USED.
2. CHECK ANCHOR BOLT SIZE, NO., SPACING, & BOLT CIRCLE DIA. ON TEMPLATE AGAINST ANCHOR BOLT LAYOUT DRAWINGS BEFORE INSTALLATION.
3. BOLT TEMPLATES AVAILABLE FOR SECTIONS 6N THRU 16N OR 16NH.
4. ALLOW FOR DRAINAGE OF ALL PIPE LEG TOWER SECTIONS.
5. PART NO. IN CHART AT UPPER LEFT CONSISTS OF 12 ANCHOR BOLTS & 6 TEMPLATES.





PAD FOUNDATION FOR SECTIONS 1W-7N
3 PIER & PAD FOUNDATIONS FOR SECTIONS 7N THRU 16N OR 16NH

NOTE: SEE DWG. NO. B-740973 FOR TEMPLATE FABRICATION DETAILS.

NO.	DESCRIPTION	DATE	BY
R2	RE-DRAWN (REPLACES CU-730104 R1)	2-14-75	DH

REVISIONS

ROHN® MANUFACTURING
DIVISION OF MEARON INCORPORATED

TITLE: ANCHOR BOLT SETTING TEMPLATE INFORMATION & SHORT BASE DETAILS

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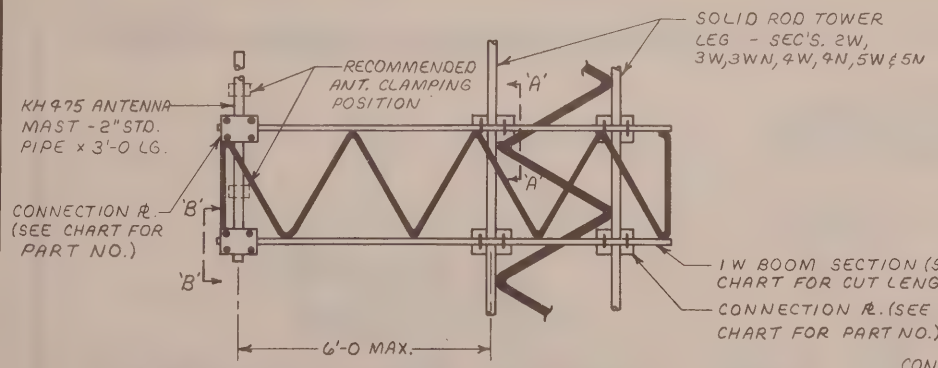
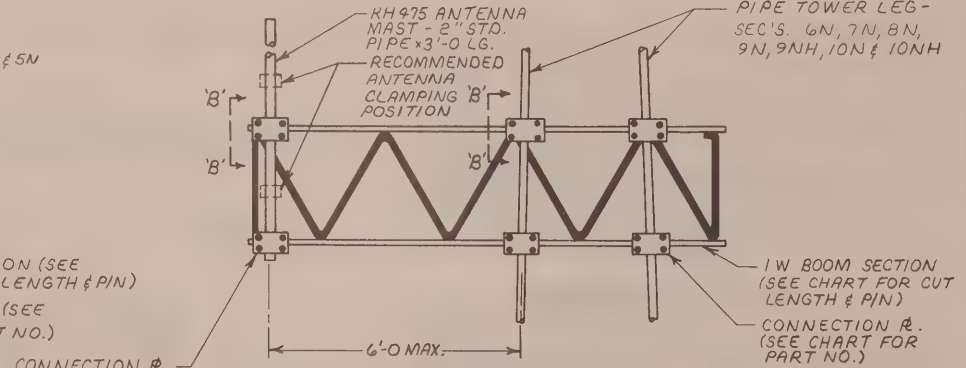
FILE NO.

SCALE	MATERIAL	FINISH	WT.
DWN. BY DH	DATE 2-14-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY RDH	DATE 4-1-75	TOLERANCES: DEC. ± FRAC. ± ANGLES ±	DWG. NO. CU-730104 R2
APP'D. MFG ENG. MW	DATE 4-1-75		
APP'D. QUALITY MBL	DATE 4-1-75		


SOLID ROD TOWER LEG - SEC'S. 2W, 3W, 3WN, 4W, 4N, 5W & 5N
RECOMMENDED ANT. CLAMPING POSITION
'A'
KH 475 ANTENNA MAST - 2" STD. PIPE x 3'-0 LG.
CONNECTION R. (SEE CHART FOR PART NO.)
'B'
1W BOOM SECTION (SEE CHART FOR CUT LENGTH & P/N)
CONNECTION R. (SEE CHART FOR PART NO.)
6'-0 MAX.

1W BOOM INSTALLATION FOR WELDED SECTIONS


KH 475 ANTENNA MAST - 2" STD. PIPE x 3'-0 LG.
RECOMMENDED ANTENNA CLAMPING POSITION
'B'
PIPE TOWER LEG - SEC'S. 6N, 7N, 8N, 9N, 9NH, 10N & 10NH
1W BOOM SECTION (SEE CHART FOR CUT LENGTH & P/N)
CONNECTION R. (SEE CHART FOR PART NO.)
CONNECTION R. (SEE CHART FOR PART NO.)
6'-0 MAX.

1W BOOM INSTALLATION FOR BOLTED SECTIONS

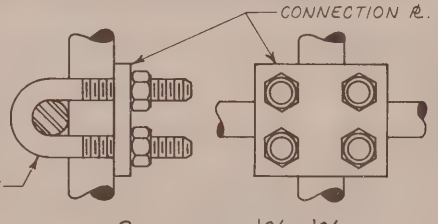
GENERAL NOTES

*1. ONE ANTENNA MAST KIT PROVIDED W/ EACH BOOM ASS'Y. IF ADDITIONAL MAST KITS ARE REQUIRED THEY MUST BE PURCHASED SEPARATELY. SEE CHART FOR ASS'Y. NO. AND DATA.

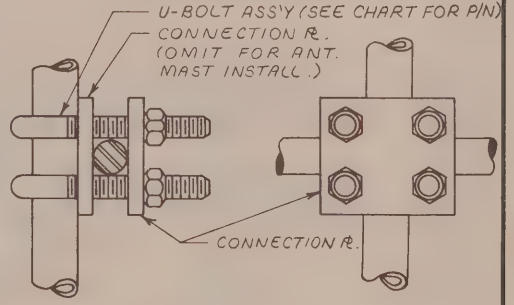
2. OUTSIDE LEG OF 1W BOOM SECTION HAS BEEN OMITTED FOR CLARITY OF BOOM CONNECTIONS.

3. ALL BOOMS DESIGNED TO SUPPORT A MAXIMUM PROJECTED AREA OF 3 SQ. FT. -6'-0 FROM TOWER LEG & 3'-0 ABOVE AXIS OF THE BOOM - 30 PSF WIND E.I.A.

ASS'Y. NO. DESCRIPTION
SSV - 25 - 6B
TOWER MODEL — SECT. NO. — BOOM CUT LENGTH



SECTION 'A'-'A'



SECTION 'B'-'B'

BILL OF MATERIAL

ASS'Y. NO.	PART NO.	QTY.	DESCRIPTION	DWG. NO.
SSV-25-6B	VY 971	2	CONNECTION R.	B-710330R1
	VY 970	4	CONNECTION R.	B-710330R1
	VY 973	1	6' LG. 1W BOOM	B-770479
	JR81A	8	U-BOLT ASS'Y.	B-651028R16
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-25-9B	VY 971	2	CONNECTION R.	B-710330R1
	VY 970	4	CONNECTION R.	B-710330R1
	VY 979	1	9'LG. 1W BOOM	B-770479
	JR81A	8	U-BOLT ASS'Y.	B-651028R16
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-6-6B	VY 971	10	CONNECTION R.	B-710330R1
	VY 973	1	6' LG. 1W BOOM	B-770479
	JR83A	12	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-67-9B	VY 971	10	CONNECTION R.	B-710330R1
	VY 979	1	9'LG. 1W BOOM	B-770479
	JR83A	12	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-67-12B	VY 971	10	CONNECTION R.	B-710330R1
	VY 975	1	12' LG. 1W BOOM	B-770479
	JR83A	12	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-7-15B	VY 971	10	CONNECTION R.	B-710330R1
	VY 976	1	15'LG. 1W BOOM	B-770479
	JR83A	12	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2

ASS'Y. NO.	PART NO.	QTY.	DESCRIPTION	DWG. NO.
SSV-8-9B	VY 971	2	CONNECTION R.	B-710330R1
	VY 972	8	CONNECTION R.	B-710330R1
	VY 974	1	9'LG 1W BOOM	B-770479
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	JR84A	8	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-89-12B	VY 971	2	CONNECTION R.	B-710330R1
	VY 972	8	CONNECTION R.	B-710330R1
	VY 975	1	12'LG. 1W BOOM	B-770479
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	JR84A	8	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-8910-15B	VY 971	2	CONNECTION R.	B-710330R1
	VY 972	8	CONNECTION R.	B-710330R1
	VY 976	1	15'LG. 1W BOOM	B-770479
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	JR84A	8	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
SSV-910-18B	VY 971	2	CONNECTION R.	B-710330R1
	VY 972	8	CONNECTION R.	B-710330R1
	VY 977	1	18'LG. 1W BOOM	B-770479
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	JR84A	8	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2
VY 978 *	VY 971	2	CONNECTION R.	B-710330R1
	JR83A	4	U-BOLT ASS'Y.	B-651028R16
	KH 475	1	ANTENNA MAST	B-770160R2

No.	Revision Description	Date	By
R1	REDRAWN & REVISED P/N'S.	6-24-77	MDI

Unarco-Rohn
Division of Unarco Industries Inc

Title: 1W BOOM INSTALLATIONS

Scale: NONE		Unless otherwise specified dimensions are given in inches	
Drawn by: MDI	Date: 6-24-77	Tolerances: Decimals ±	Fractions ±
Checked by: [illegible]	Date: 6-27-77	Angles ±	
Approved by Engineering: CW	Date: 6-28-77	Material	Finish
Approved by Production	Date	Weight	
Approved by Sales: PM	Date: 6-28-77	File Number	

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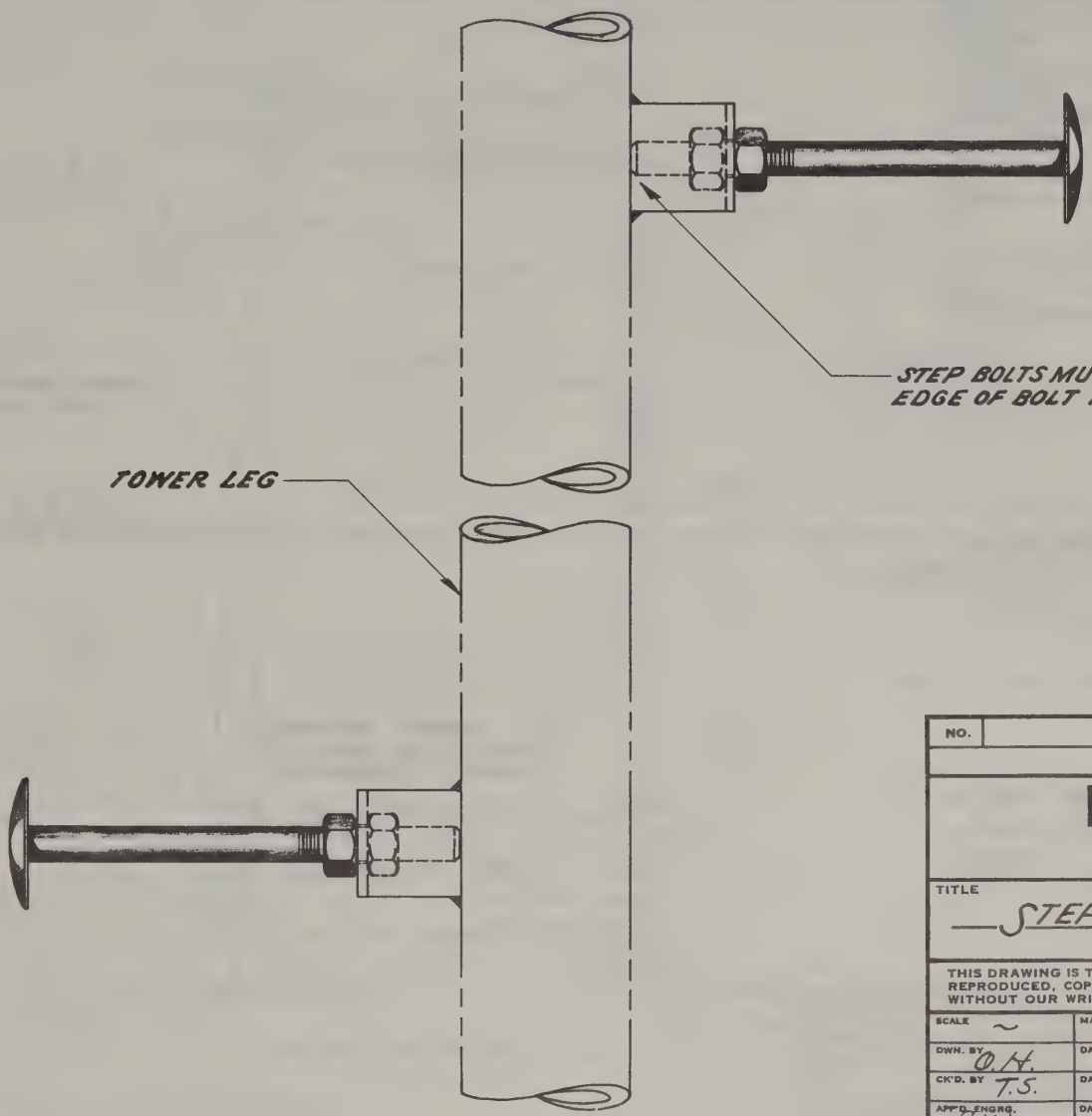
Drawing Number: C-710348R1



NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN® MANUFACTURING
DIVISION OF GEARCO MANUFACTURING INC.

TITLE
STEP BOLT INSTALLATION DETAIL

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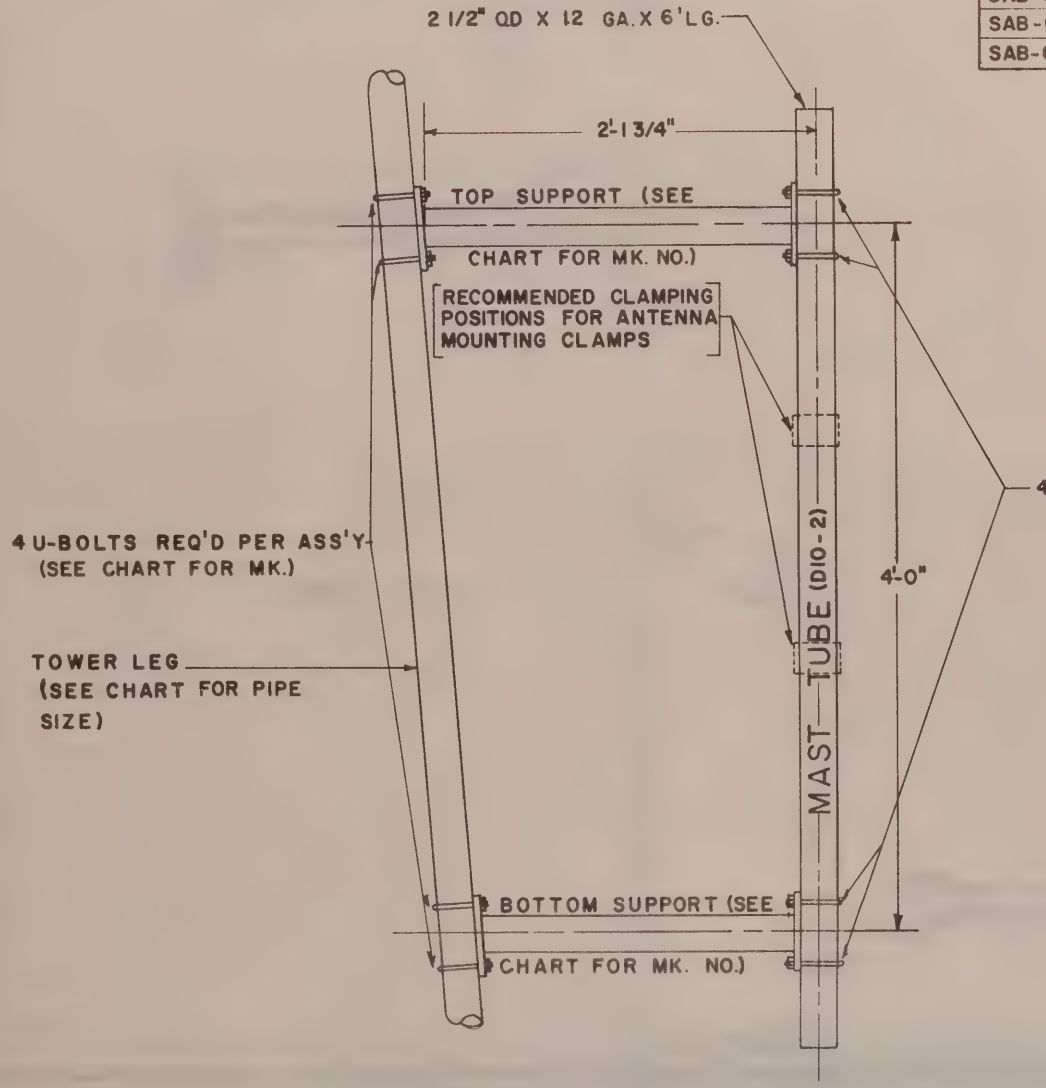
FILE NO.

SCALE	MATERIAL	FINISH	WT.
~			

DWN. BY O.H.	DATE 4-16-74	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D. BY T.S.	DATE 4-17-74	TOLERANCES: DEC. ± FRAC. ± ANGLES ±
APP'D. ENGRG. CW	DATE 4-17-74	DWG. NO. B-651264
APP'D. SALES DS	DATE 4-17-74	

CAT. NO.	LEG SIZE	TOP MK.	BOT. MK.	U-BOLT	DW'G. NO.
SAB-611-2	2"Ø PIPE	TM-2	BM-2	JR-83	C-710148
SAB-611-25	2 1/2"Ø PIPE	TM-3	BM-3	JR-84	C-710136
SAB-611-3	3"Ø PIPE	TM-4	BM-4	JR-88	C-710147


2 1/2" OD X 12 GA. X 6' LG.
2'-1 3/4"
TOP SUPPORT (SEE
CHART FOR MK. NO.)
RECOMMENDED CLAMPING POSITIONS FOR ANTENNA MOUNTING CLAMPS
4 U-BOLTS REQ'D PER ASS'Y (SEE CHART FOR MK.)
TOWER LEG (SEE CHART FOR PIPE SIZE)
MAST TUBE (D10-2)
4'-0"
4 U-BOLTS REQ'D PER ASS'Y (MK. NO. JR-83)
BOTTOM SUPPORT (SEE
CHART FOR MK. NO.)

NOTE

1.) NUT & PAL NUTS SUPPLIED WITH ALL U-BOLTS

2) FOR U-BOLT SIZE SEE DWG. B-651028

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN

TITLE VHF ANTENNA SIDE ARM BRKT. FOR MODEL SSVN TOWER

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FILE NO.

SCALE	MATERIAL	FINISH	WT.
NONE			

DWN. BY	DATE	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
DM	1-25-71	
CK'D BY	DATE	TOLERANCES: DEC. ± FRAC. ± ANGLES ±
APP'D	DATE	DWG. NO. B-710114

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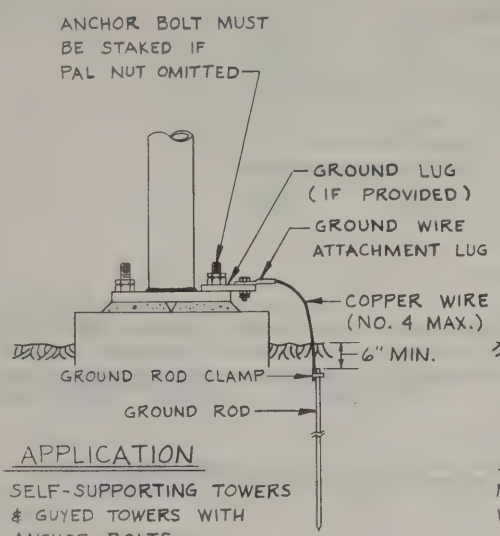
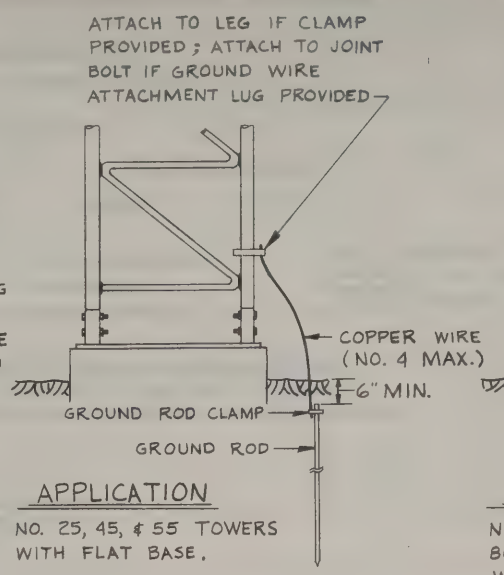

ANCHOR BOLT MUST BE STAKED IF PAL NUT OMITTED
GROUND LUG (IF PROVIDED)
GROUND WIRE ATTACHMENT LUG
COPPER WIRE (NO. 4 MAX.)
6" MIN.
GROUND ROD CLAMP
GROUND ROD

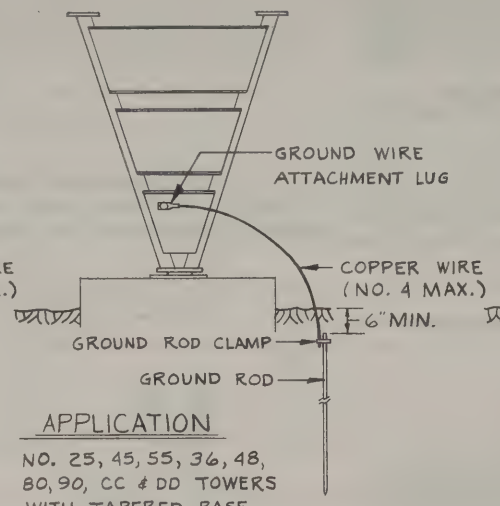
APPLICATION

SELF-SUPPORTING TOWERS & GUYED TOWERS WITH ANCHOR BOLTS.


ATTACH TO LEG IF CLAMP PROVIDED; ATTACH TO JOINT BOLT IF GROUND WIRE ATTACHMENT LUG PROVIDED
COPPER WIRE (NO. 4 MAX.)
6" MIN.
GROUND ROD CLAMP
GROUND ROD

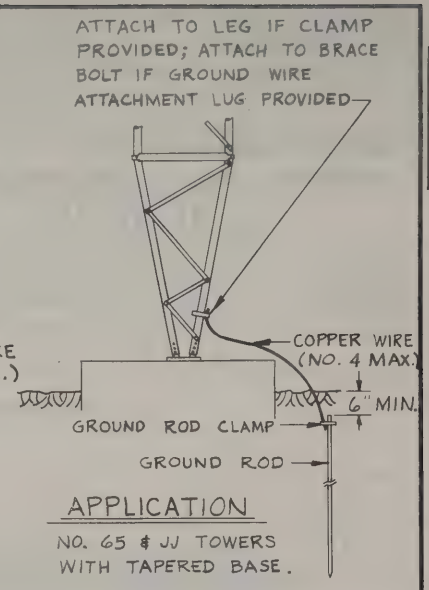
APPLICATION

NO. 25, 45, & 55 TOWERS WITH FLAT BASE.



APPLICATION

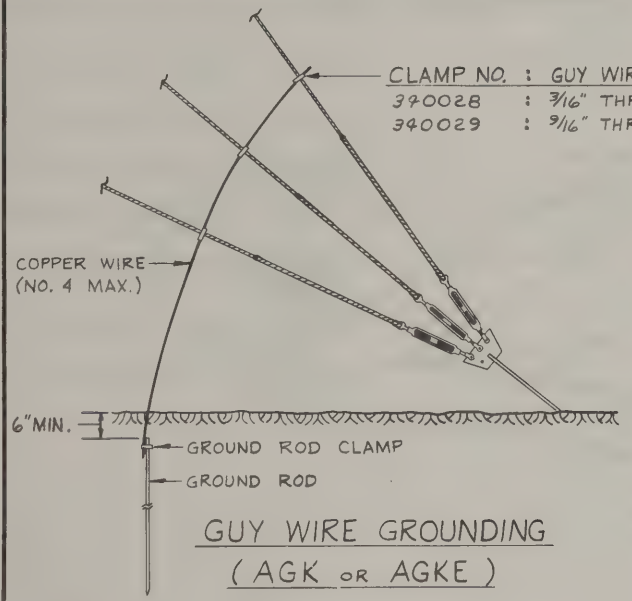
NO. 25, 45, 55, 36, 48, 80, 90, CC & DD TOWERS WITH TAPERED BASE.


ATTACH TO LEG IF CLAMP PROVIDED; ATTACH TO BRACE BOLT IF GROUND WIRE ATTACHMENT LUG PROVIDED
COPPER WIRE (NO. 4 MAX.)
6" MIN.
GROUND ROD CLAMP
GROUND ROD

APPLICATION

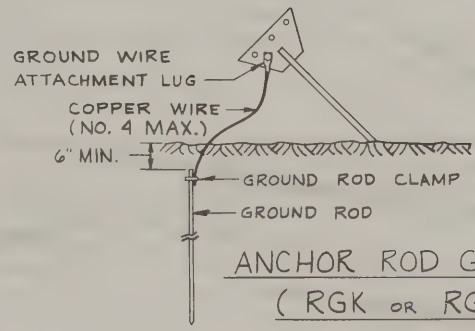
NO. 65 & JJ TOWERS WITH TAPERED BASE.

BASE GROUNDING KITS (BGK OR BGKE)



GUY WIRE GROUNDING

(AGK OR AGKE)



ANCHOR ROD GROUNDING

(RGK OR RGKE)

NOTE :

REMOVE ALL SHARP BENDS FROM COPPER WIRE

ANCHOR GROUNDING KITS

NO.	DESCRIPTION	DATE	BY
R1	CHG'D. CLAMP NO. ON AGK & AGKE DETAIL	6-9-77	MDI

REVISIONS

ROHN® MANUFACTURING

DIVISION OF GHARDA

TITLE: TOWER GROUNDING METHODS

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FILE NO.

SCALE	MATERIAL	FINISH	WT.
NONE			

DWN. BY JER	DATE 11-20-73	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D. BY	DATE 11-27-73	
APP'D. ENG'RG.	DATE 11-27-73	TOLERANCES: DEC. ±, FRAC. ±, ANGLES ±
APP'D. SALES	DATE 12/1/73	DWG. NO. C-731105 R1

GAF 880-250 2-72 48194

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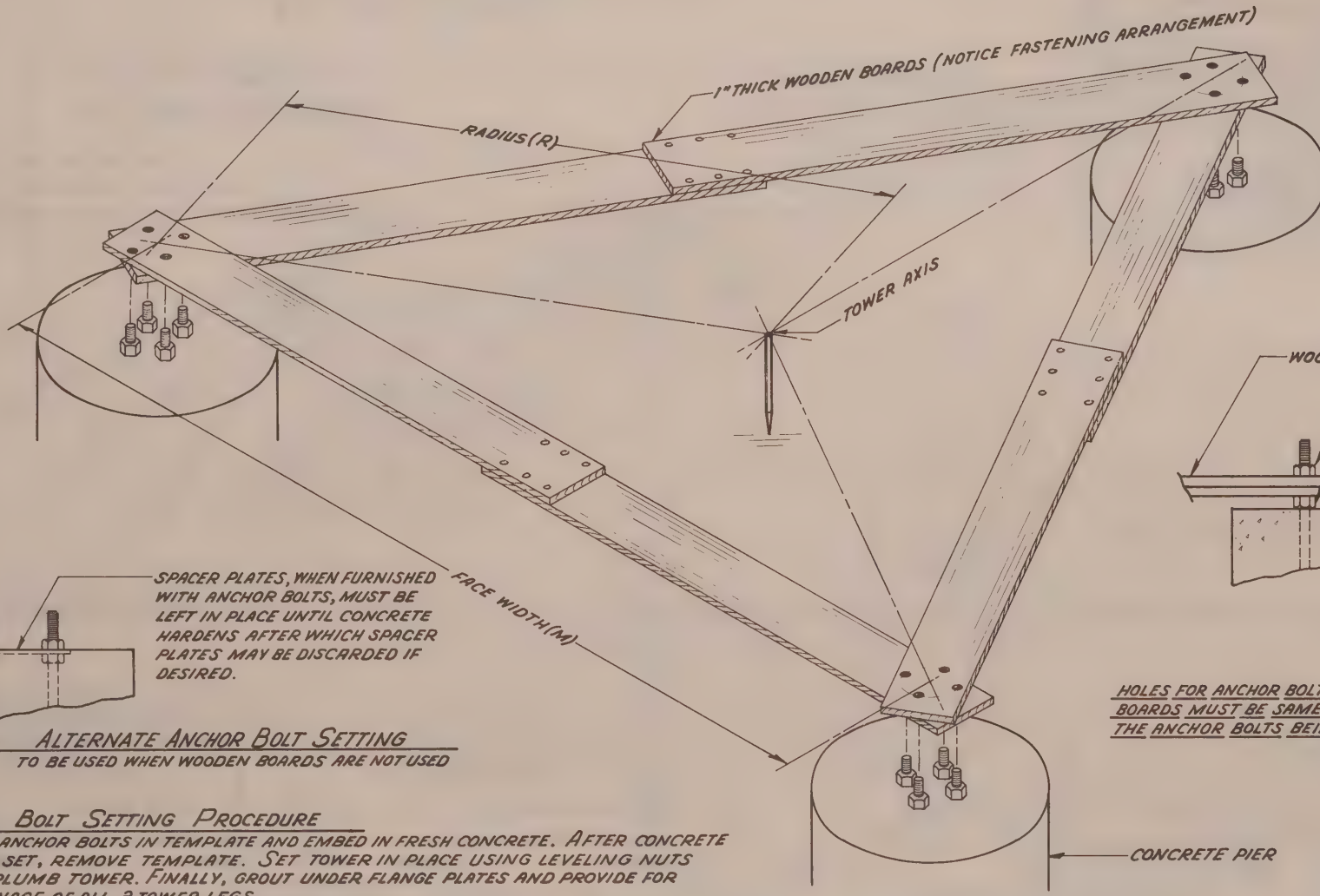
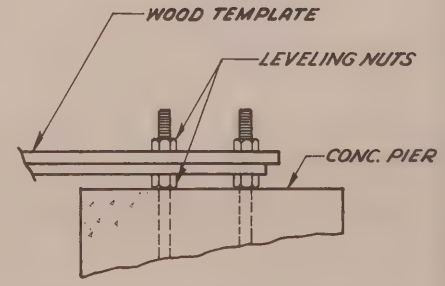
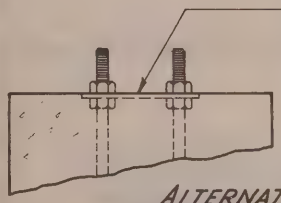






SPACER PLATES, WHEN FURNISHED WITH ANCHOR BOLTS, MUST BE LEFT IN PLACE UNTIL CONCRETE HARDENS AFTER WHICH SPACER PLATES MAY BE DISCARDED IF DESIRED.

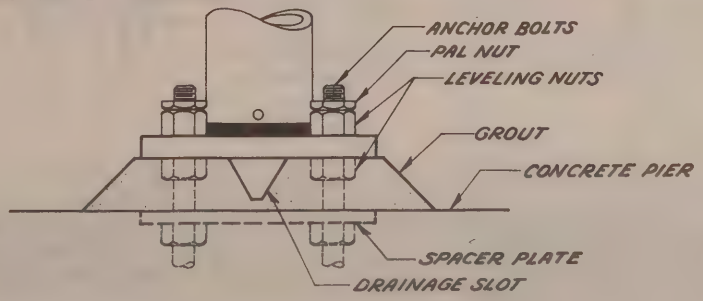
ALTERNATE ANCHOR BOLT SETTING

TO BE USED WHEN WOODEN BOARDS ARE NOT USED

HOLES FOR ANCHOR BOLTS IN WOODEN BOARDS MUST BE SAME DIAMETER AS THE ANCHOR BOLTS BEING USED.

ANCHOR BOLT SETTING PROCEDURE

SET ANCHOR BOLTS IN TEMPLATE AND EMBED IN FRESH CONCRETE. AFTER CONCRETE HAS SET, REMOVE TEMPLATE. SET TOWER IN PLACE USING LEVELING NUTS TO PLUMB TOWER. FINALLY, GROUT UNDER FLANGE PLATES AND PROVIDE FOR DRAINAGE OF ALL 3 TOWER LEGS.



NOTE: ANCHOR BOLT ORIENTATION SHOWN ABOVE IS ONLY FOR SECTIONS 6N THRU 16N STANDARD OR HEAVY SERIES.

NO.	DESCRIPTION	DATE	BY
R1	ADDED NOTE	4-12-77	DH

REVISIONS

ROHN

TITLE: ANCHOR BOLT SETTING PROCEDURE FOR SELF-SUPPORTING TOWERS

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FILE NO.

SCALE	MATERIAL	FINISH	WT
~			

DWN BY	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES
O.H.	10-11-71	
CK'D BY: T.S.W.	DATE 10-13-71	TOLERANCES: DEC ± FRAC ± ANGLES ±
APP'D: [illegible]	DATE 11-1-71	DWG NO C-711017 R1

PARTS LIST P-286
(Replaces P-284)

October 1, 1977

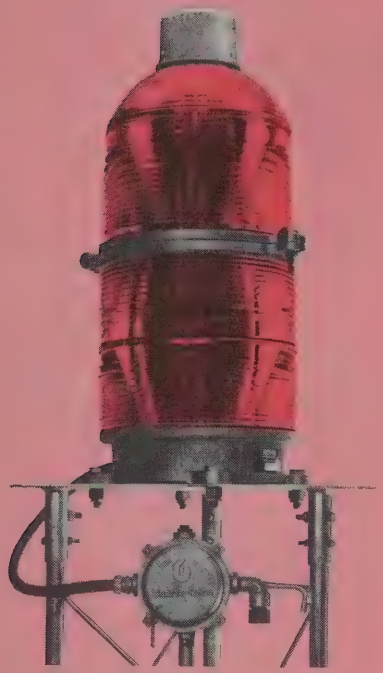
SELF-SUPPORTING TOWER

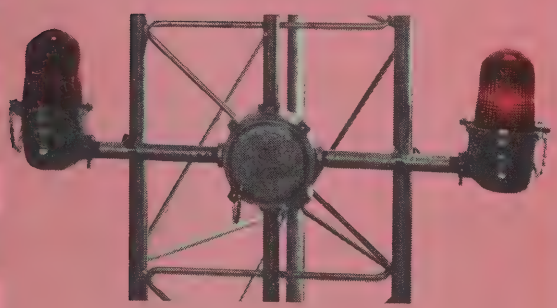
SSVN SERIES

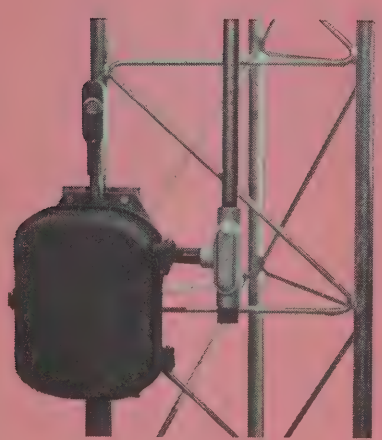
30 Lbs./Sq. Ft. Wind Load

ITEM & PART NUMBER	WT.	TOWER HEIGHT 30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'	160'	170'	180'	190'	200'
Tapered Top 1TT	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18' Welded Straight Section 1W	116		1		1		1		1		1		1		1		1		
10' Welded Straight Section 1WB	65	1		1		1		1		1		1		1		1		1	
20' Welded Tapered Section 2WAPL	180																		1
20' Welded Tapered Section 2W	160	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
20' Welded Tapered Section 3WN	230			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20' Knock Down Tapered Section 4N	435					1	1	1	1	1	1	1	1	1	1	1	1	1	1
20' Knock Down Tapered Section 5N	540							1	1	1	1	1	1	1	1	1	1	1	1
20' Knock Down Tapered Section 6N	480									1	1	1	1	1	1	1	1	1	1
20' Knock Down Tapered Section 7N	545											1	1	1	1	1	1	1	1
20' Knock Down Tapered Section 8N	700													1	1	1	1	1	1
20' Knock Down Tapered Section 9N	720															1	1	1	1
20' Knock Down Tapered Section 10N	830																	1	1
20' Knock Down Tapered Section 11N	1410																		1
Base Grounding Kit BGKE	10	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
SB2	45	1	1																
SB3N	65			1	1														
SB4N	80					1	1												
SB5	105							1	1										
6NAB	50									1	1	1	1	1	1	1	1		
10NAB	80																	1	
11NAB	110																		1
Anti-Climb Warning Sign ACWS		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOWER WEIGHT		308	359	558	609	1008	1059	1573	1624	1994	2045	2539	2590	3239	3290	3959	4010	4819	6208

See applicable drawings for foundation and loading details.







Rohn

LIGHTING EQUIPMENT

Quality Designed and Constructed for Unexcelled Performance

Rohn Model B-1 300 MM Code Beacon for Obstruction Lighting

- Rohn B-1 300 MM Code Beacon is designed as a warning light for hazards to air navigation. Designated for use on TV, radio, microwave and transmission line towers, water tanks, stacks, bridges and other lofty structures presenting hazards as specified by the FCC or FAA. Meets all FCC and FAA beacon specifications and requirements.

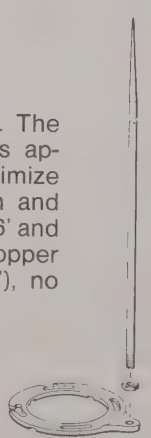
- Beacons furnished with red filters and clear heat-resistant lenses, 5 feet of SO Neoprene covered cable secured to the base with a water tight connector. Conduit may be used, if desired. A terminal block in the base permits each lamp to be independently fed and monitored, if desired. Internal wiring is of heavily insulated flexible cable. Mounting dimensions 4-11/16" holes 90° apart on 13-1/4" diameter B.C.

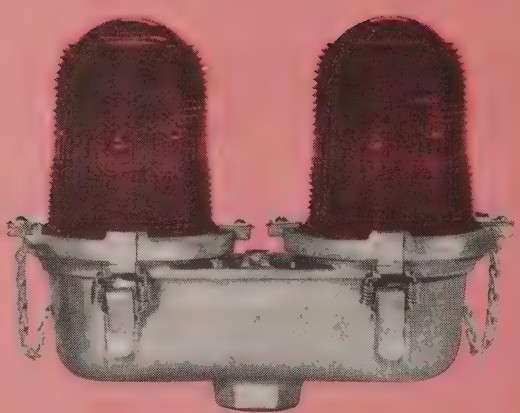
- Beacon castings are of heavy copper-free aluminum alloy. Heavy hinge rings. Neoprene gasket and butterfly clamps maintain weathertight seals. Designed for service under all climate and weather conditions.

- Optical lens system of 4 clear Fresnel lenses and 2 internal aviation red color screens will emit 360° concentrated beam. 3000 hour 620 watt mogul, prefocused airway beacon lamps are required. Rohn P.N. B620W (120V, also available 230V). Furnished with Tower Lighting System. If beacon *only* is ordered, lamps must be ordered separately.

Rohn Lightning Rod Assembly

Designed for use with 300 MM beacon. The aluminum lightning rod (LR-B1) extends approximately 2 feet above beacon to minimize the possibility of damage to the beacon and its wiring includes: LR, dimension: 7/8" x 6' and Beacon Mounting Ring. Also available in copper clad steel nickel tipped (LR-C, 5/8" x 5'), no mounting ring included.





Rohn

OBSTRUCTION LIGHTS

Engineered and Built to Meet FAA and FCC Specifications

Rohn obstruction lights are designed as warning signals on TV, radio, microwave, transmission line towers and other aerial navigation hazards as specified by the FAA and FCC regulations.

OB-1 SINGLE

Side entrance conduit fitting type. Supplied with a 3/4" conduit side entrance tap, the OB-1 is designed to facilitate installation of horizontal conduit stubs.

OB-2 DOUBLE

Same as OB-1 except has double lamp and bottom entrance fitting for installation on vertical conduit runs. Available with 3/4" or 1" conduit entrance.

Both models use flanged Fresnel lenses seated against special long life Neoprene gaskets cemented to the fixture base. Drain holes in the fixture reduces condensation and eliminates accumulation of moisture from forming around lamp base or within the lens, thus insuring longer life and better service. Military approved type compression spring latches for easier maintenance supplied on all models. Relamping is quickly and easily accomplished simply by releasing latches and replacing lens and lens holder as a unit. Both are suspended on safety chain during servicing operation. Both models have cast aluminum alloy housings. Lamps not included. Recommendation is for 116 watt 8000 hour lamps [Rohn P.N. OB-1 (120V, also available 230V)].

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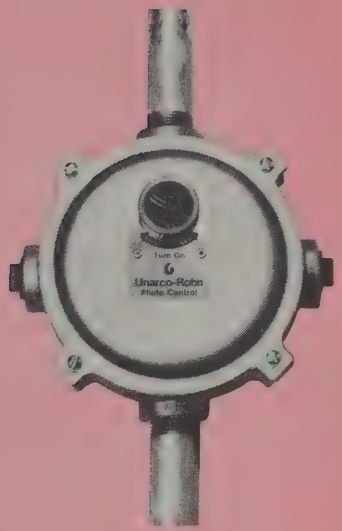
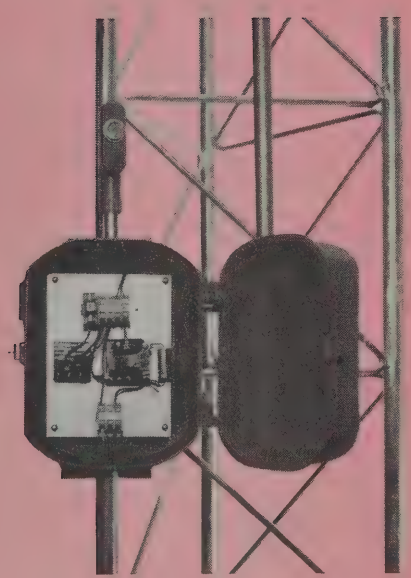




Rohn

LIGHTING CONTROLS

Solid-State, Maintenance Free Fail Safe Lighting

Rohn Beacon Flashers are completely solid-state with no moving parts to arc, weld, wear and eventually fail. All circuitry is encapsulated to protect against shock, vibration and humidity.

Neon test light conveniently included inside housing so it's always readily available for testing the unit to be certain it is functioning whenever beacon cannot be seen. Get all the features inherent in SOLID-STATE performance from Rohn.

Photoelectric Control

RPH-1, 120V or RPH-2, 230V. Light sensitive control to turn tower lights on when sky darkens. Type A-1 Lighting System or ICAO International Systems.

Flasher Controls

Available in 120V or 230V. Pre-set for 25 flashes per minute. "On" time is double "off" time.

SSF-1
Solid-state single circuit (120V) beacon flasher in outdoor housing. (For adding to existing photo-electric control).

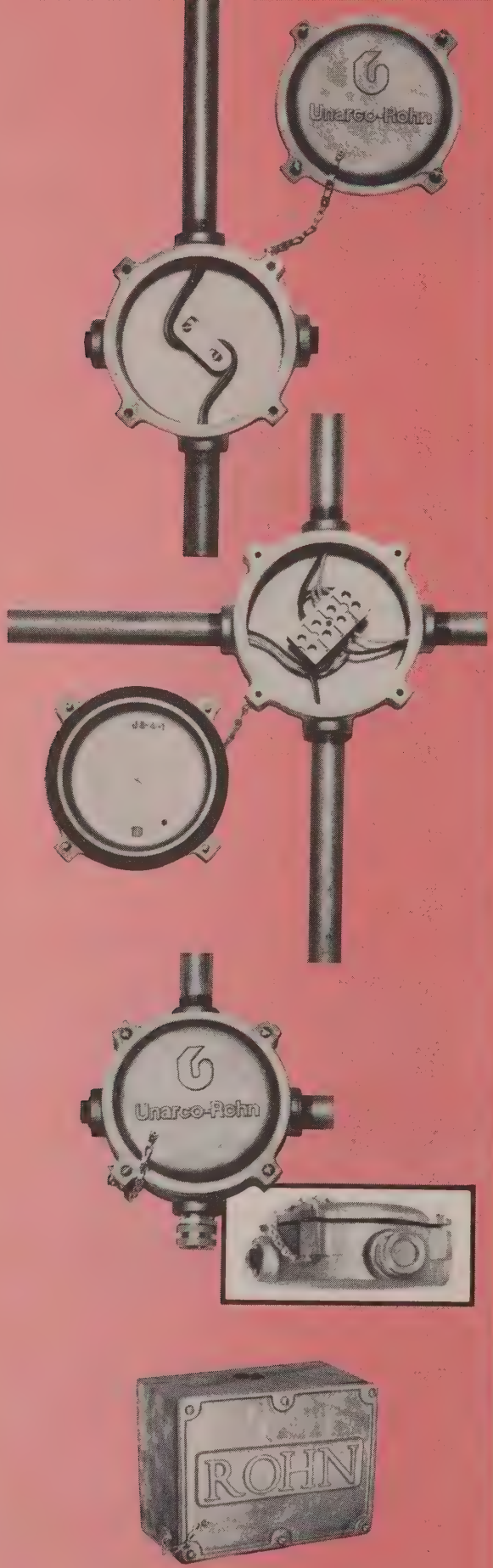
SSF-2
Solid-state single circuit (230V) beacon flasher in outdoor housing. (For adding to existing photo-electric control).

RC231PC or RC232PC
A2 or A3 lighting system control combination — solid-state single circuit flasher (RC231PC, 120V — RC232PC, 230V) and photoelectric control in outdoor housing. If load balance resistor is required, use RC45 control.

RC-45-1 or RC-45-2
A4 or A5 lighting system control combination — solid-state two circuit flasher (RC-45-1, 120V — RC-45-2, 230V) and photoelectric control in outdoor housing.

Alarms

For unattended installations various alarm systems are available on request.



Rohn

JUNCTION BOXES

Cast Copper-Free Aluminum Weathertight

Rohn junction boxes are of adequate size to handle the number of terminals to permit correct, uncomplicated installation. Each box furnished with cover, Neoprene sealing gasket, safety chain and self-retaining cover screws. Each comes complete with 4 or 7 contact pressure type terminal blocks, as required.

- **JB-4C**
  Wire support for vertical run. Wire support employs "change of direction" principle for full support.
- **JB-4TC**
  Wire terminal and support for vertical and horizontal run.
- **CB-1**
  Conduit breather is used on JB-4 and JB-7 series. CB-1 is used in top mast and lowest junction box in installation to provide air circulation and prevent moisture build-up and condensation.

JB-4 Series Specifications

Inside dia. (approx.) 5" dia. x 2" deep 4 terminal (similar to No. 9-85-4 Kulka) Hub Tap . . . 3/4" conduit size.

- **JB-7T**
  Box and Terminal
- **JB-7C**
  Box and Cable Support
- **JB-7TC**
  Box, Terminal and Cable Support

JB-7 Series Specifications

Inside dia. (approx.) 6" x 8" x 4" 7 terminal (similar to No. 9-85-7 Kulka) Hub Tap . . . 1" conduit size.

Complete rigid conduit lighting systems available for all size towers — exposed wire systems available in heights up to 450'. Write for details and prices.

Unarco-Rohn

Division of Unarco Industries, Inc
6718 West Plank Road. P O Box 2000
Peoria, Illinois 61656

Form No. 76656

Printed in U.S.A.

May 1, 1978

OBSTRUCTION LIGHTING COMPONENTS

PART NUMBER		WT.
B1	300 MM beacon with red filter screens - no bulbs	95
OB1	Single obstruction light (red), 3/4" side entrance - no bulbs	4
OB2	Double obstruction light (red), 3/4" to 1" bottom entrance - no bulbs	4
PH1	Discontinued	
RPH1	Photo-electric control only, in outdoor housing (120 volt)	3
PH2	Discontinued	
RPH2	Photo-electric control only, in outdoor housing (230 volt)	3
SSF1	Solid-state beacon flasher only, in outdoor aluminum housing (120 volt)	
SSF2	Solid-state beacon flasher only, in outdoor aluminum housing (230 volt)	
*RC231	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (120 volt)	15
RC231PC	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (120 volt)	15
RC231FS	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing with fail safe feature (120 volt)	15
*RC232	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (230 volt)	15
RC232PC	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (230 volt)	15
RC232FS	A2 or A3 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing with fail safe feature (230 volt)	15
RC451	A4 or A5 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (120 volt)	16
RC451FS	A4 or A5 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing with fail safe feature (120 volt)	16
RC452	A4 or A5 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing (230 volt)	16
RC452FS	A4 or A5 lighting control with combination solid-state flasher and photo-electric control in outdoor aluminum housing with fail safe feature (230 volt)	16
MA101A1	A1 alarm and photo-electric control unit only, in outdoor housing	
MA3015	A2 or A3 alarm, flasher, and photo-electric control only, in indoor housing	
**LBRR1200	Load balance resistor, outdoor or indoor (1200 watts)	
CB1	Conduit breather, 3/4" tap	½
JB4T	Discontinued	
JB4C	JB4 junction box with cable support	3
JB4TC	JB4 junction box with 4 contact terminal blocks and cable support	3
JB7T	JB7 junction box with 7 contact terminal blocks	6
JB7C	JB7 junction box with cable support	6
JB7TC	JB7 junction box with 7 contact terminal blocks and cable support	6
B620W	Beacon bulbs (3000 hour) - 120 volt (case of 24 bulbs)	
OB116W	Obstruction light bulbs (8000 hour) - 120 volt (case of 24 bulbs)	
B600W	Beacon bulbs (1000 hour) - 230 volt (case of 24 bulbs)	
OB100W	Obstruction light bulbs (2000 hour) - 230 volt (case of 120 bulbs)	
B700W	Beacon bulbs (6000 hour) - 120 volt (case of 24 bulbs)	
WR100	Can of 100' x 1/2" stainless steel wraplock with buckles, keys and ratchet wrench	3
LRB1	Lightning rod, 7/8" x 5' solid aluminum, assembly with base for 300MM beacon	6
LR	Lightning rod, 7/8" x 5' solid aluminum, only with nut (Rohn beacon mounting plates drilled to fit this rod)	3
LRC	Lightning rod, 5/8" x 5' solid copper, nickel tipped, only with nut (Rohn beacon mounting plates drilled to fit this rod)	6

*Discontinued. Replacement parts available only.

**For use with alarm lighting kits only. LBRR1200 not required for RC45 units. A2 or A3 lights requiring a LBRR1200 must use a RC45 flasher.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SHEET D-1345
(Replaces D-884)

May 1, 1978

TOWER OBSTRUCTION LIGHTING KITS

TOWER HEIGHT	STANDARD KIT PART NUMBER	230V, 50 CYCLE KIT PART NUMBER	*SELF-SUPPORTING KIT W/3RD OB1 PART NUMBER
EXPOSED WIRE			
21' - 150'	RA1E	RA1EE	---
151' - 230'	RA2E1	RA2E1E	RA2E1SS
231' - 300'	RA2E2	RA2E2E	RA2E2SS
301' - 360'	RA3E1	RA3E1E	RA3E1SS
361' - 450'	RA3E2	RA3E2E	RA3E2SS
CONDUIT			
21' - 100'	RA1C1	RA1C1E	---
101' - 150'	RA1C2	RA1C2E	---
151' - 200'	RA2C1	RA2C1E	RA2C1SS
201' - 300'	RA2C2	RA2C2E	RA2C2SS
301' - 350'	RA3C1	RA3C1E	RA3C1SS
351' - 450'	RA3C2	RA3C2E	RA3C2SS
451' - 600'	RA4C	RA4CE	---
601' - 750'	RA5C	--	---
MICROWAVE			
21' - 100'	RA1C1M	--	---
101' - 150'	RA1C2M	--	---
151' - 200'	RA2C1M	--	RA2C1MSS
201' - 300'	RA2C2M	--	RA2C2MSS
300' - 450'	RA3CM	--	RA3CMSS
451' - 600'	RA4CM	--	---

All kits include photo control, necessary wire, fittings, junction boxes, lights, spare bulbs and flasher (where required). Microwave kits also include indoor alarm unit with remote control. The 230V, 50 cycle kit includes export crating and outdoor controls. See drawings and parts lists for details.

*Optional, for additional side lights (3 at each level).

NOTE: Prices are available on request for special kits for towers over 750', High Intensity Strobe Lighting Kits, and I.C.A.O. Lighting Kits.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SHEET D-1346
(Replaces D-1115)

May 1, 1978

REPLACEMENT PARTS FOR OBSTRUCTION LIGHTING

PART NUMBER

OB1 & OB2 OBSTRUCTION LIGHTS

530230	OB red lens (AP35222R)
OBG1	Gasket
OBR	OB retainer ring
OBC	OB catch
50714	OB bulb receptacle

B1 BEACON

711130	Red filter screen for beacon (AP3524) - 2 required per beacon
547870	Top beacon lens (AP3557/530870)
547770	Middle beacon lens (AP3556/530770)
547020	Bottom beacon lens (AP3555/531020) - 2 required per beacon
BGS	Set of 9 beacon gaskets
BGT1	Gasket (1 per beacon)
BGT2	Gasket (3 per beacon)
BGM1	Gasket (1 per beacon)
BGB1	Gasket (4 per beacon)
ZR1	Upper "Z" ring (between 547870 & 547770)
ZR2	Lower "Z" ring (between 547020 & 547020)
23X546	Beacon bulb receptacle
WBS	Beacon asbestos wiring (inside) - complete set
CTOC	Canopy top outer cap

MISCELLANEOUS

MSK	Meter socket only
2232	Discontinued
2237	Water tight connector for 2 conductor (2 #12) - UF cable
2532	Water tight connector for 3 conductor (2 #10, 1 #14)
2534	Water tight connector for 3 conductor (2 #8, 1 #12)
2535	Water tight connector for 3 conductor (1 #6, 1 #8, 1 #12)

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

May 1, 1978

REPLACEMENT PARTS FOR OBSTRUCTION LIGHTING

PART NUMBER	
FCH1 & FCH2 FLASHER UNITS*	
CHM	Flasher motor
MTS	Mercury tilt switch
CSF	Coupler spring
FCM	Cam
LC23 FLASHER UNIT*	
MS6078	Flasher motor only
AU5216	Flasher motor w/rocker arm ass'y.
KR5045	Relay, SPDT
AU51062	Photocell ass'y., H.D. static voltage resistant
AU51062H	Photocell ass'y. w/housing & cable
AU5041	Printed circuit board ass'y.
VR5061	Thyrector
CE43932	Capacitor
RC419837A	Resistor
RV4392	Potentiometer
SW4800	Mercury tilt switch
LC45 FLASHER UNIT*	
MS6078	Flasher motor only
AU5268	Flasher motor w/rocker arm ass'y.
KR5044	Relay, DPDT
AU51062	Photocell ass'y., H.D. static voltage resistant
AU51062H	Photocell ass'y. w/housing & cable
AU5041	Printed circuit board ass'y.
VR5061	Thyrector
CE43932	Capacitor
RC419837A	Resistor
RV4392	Potentiometer
SW4800	Mercury tilt switch
MA101A1 MICROWAVE FLASHER UNIT	
KR4391	Relay
KR44191	Relay, DPDT
KR1090A	Relay, current
RW42603	Resistor
CE43932	Capacitor
RV4392	Potentiometer
VR4389A	Thyrector
AU4390	Printed circuit board ass'y.
AU51062	Photocell ass'y., H.D. static voltage resistant
AU52062H	Photocell ass'y. w/housing & cable
MA3015 MICROWAVE FLASHER UNIT	
MS6078	Flasher motor only
AU5216	Flasher motor w/rocker arm ass'y.
KR4391	Relay
KR4777	Relay, mercury
KR4782A	Relay, thermal
KR1090A	Relay, current
KR12021A	Relay, thermal
KR4790	Relay, thermal
KR44191	Relay, DPDT
KR4221	Relay, SPDT
KR4494	Relay, 3PDT
KR1202A	Relay, thermal
AU4390	Printed circuit board ass'y.

(Continued on next column)

PART NUMBER	
MA3015 MICROWAVE FLASHER UNIT (CONT'D.)	
RV4392	Potentiometer
CE43932	Capacitor
CP4271B40	Capacitor
VR4389A	Thyrector
VR4389B	Thyrector
RW42603	Resistor
RC419787A	Resistor
AU51062	Photocell ass'y., H.D. static voltage resistant
AU51062H	Photocell ass'y. w/housing & cable
SW4840	Mercury tilt switch
RC231PC & PC232PC FLASHER UNITS	
SSM11 or SSM12	Flasher drive module (120 volt) / Flasher drive module (230 volt)
KA81287	Relay, DPST
512	Rectifier
TC493B	Capacitor
A13X20	Fuse
NSL446	Photocell eye only
RPC12	Remote photocell complete (120 or 230 volt)
317A or 317C	Surge arrestor (120 volt) / Surge arrestor (230 volt)
R5K10W	Resistor (230 volt only)
PCBA1 or PCBA2	Complete printed circuit board ass'y. less module & heat sink (120 volt) / Complete printed circuit board ass'y. less module & heat sink (230 volt)
AHS	Aluminum heat sink plate for above
(Note: KR5045 relay, SPDT, used on old style RC231* or RC232*)	
RC451 & RC452 FLASHER UNITS	
SSM11	Flasher drive module (120 volt)
SSM21 or SSM12	Flasher slave module (120 volt) / Flasher drive module (230 volt)
SSM22	Flasher slave module (230 volt)
KR5045	Relay, SPDT
512	Rectifier
TC493B	Capacitor
A13X20	Fuse
NSL446	Photocell eye only
RPC12	Remote photocell complete (120 or 230 volt)
317A or 317C	Surge arrestor (120 volt) / Surge arrestor (230 volt)
R5K10W	Resistor (230 volt only)

*Discontinued. Replacement parts available only.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ADVANCED DESIGN

ROHN-LOC®

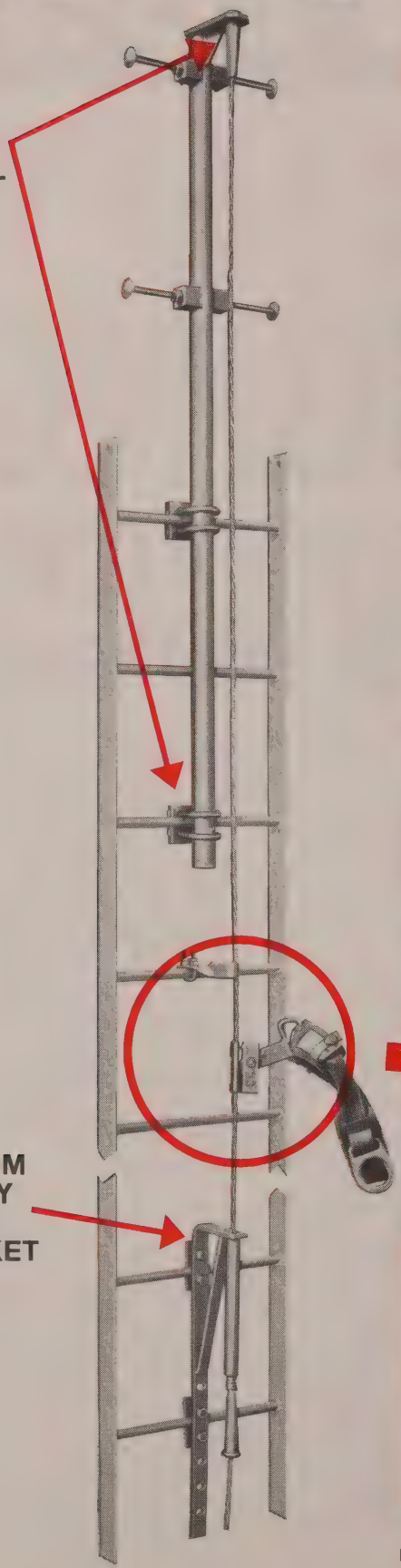
SAFETY CLIMBING DEVICES

with special unique features

that offer more advantages than any other fall prevention device!

✓ Check for Yourself...

ROHN-LOC® SAFETY



Have Outstanding Simplicity

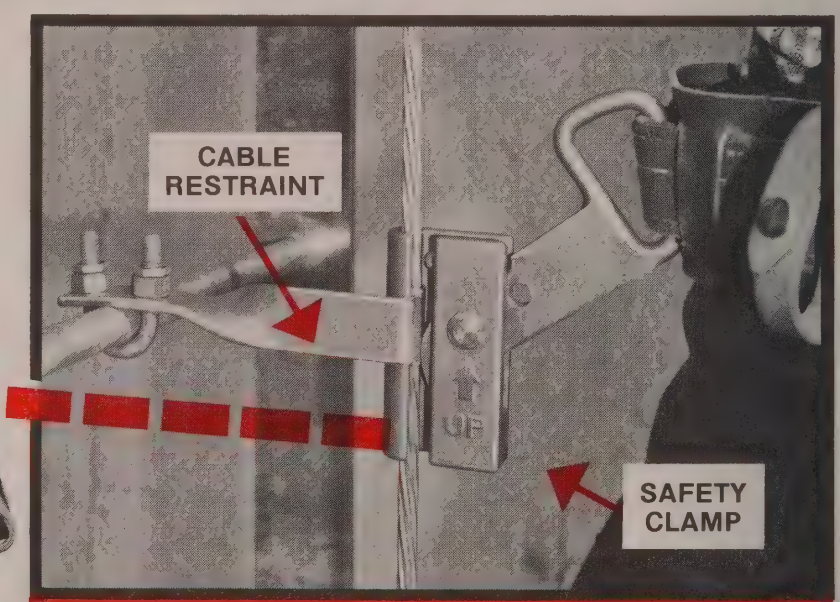
ROHN-LOC is a new, modern-design safety device that best solves the need for a fool-proof, always-available safety device for climbers of ladder or step-bolt equipped structures of all kinds.

HOW IT WORKS:

The top safety cable bracket is attached to the top most part of the structure with the bottom safety cable bracket at the very bottom, which firmly secures a ⅜" steel cable. The workman then puts on the ROHN-LOC Safety Belt with the permanently attached Safety Clamp. He is now able to safely climb the entire length of the cable, securely anchored to it to prevent injury if he should slip or fall. With the ROHN-LOC, he is instantly gripped and secured *without any free-fall whatsoever,* unlike some other devices.

There are cable restraints attached through the cable, then mounted onto the ladder (or structure) at appropriate distances along the cable to keep it rigid, even in a high wind.

The top safety cable bracket further serves as a climbing extension with permanently attached hand grips for workman to use in moving onto a platform or away from the ladder itself.



Note attachment of the Safety Clamp securely to the steel cable and how the Safety Clamp slides easily and readily through the cable restraints. Safety Clamp cannot be separated from the cable without pulling the double-lock (see next photo). Also, there is no disassembly of Safety Clamp in any manner if workman wishes to move from one cable and attach onto another. Note also that the Safety Clamp is permanently anchored to the Safety Belt.

Patent No. 3,908,791

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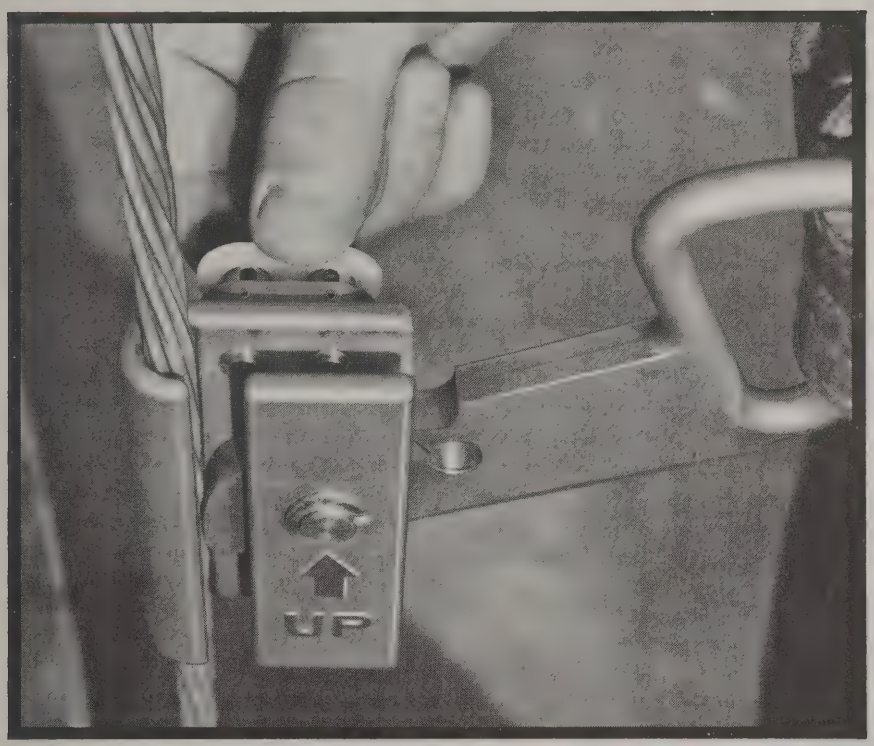
CLIMBING DEVICES

MEETS OSHA SPECIFICATIONS AND STANDARDS

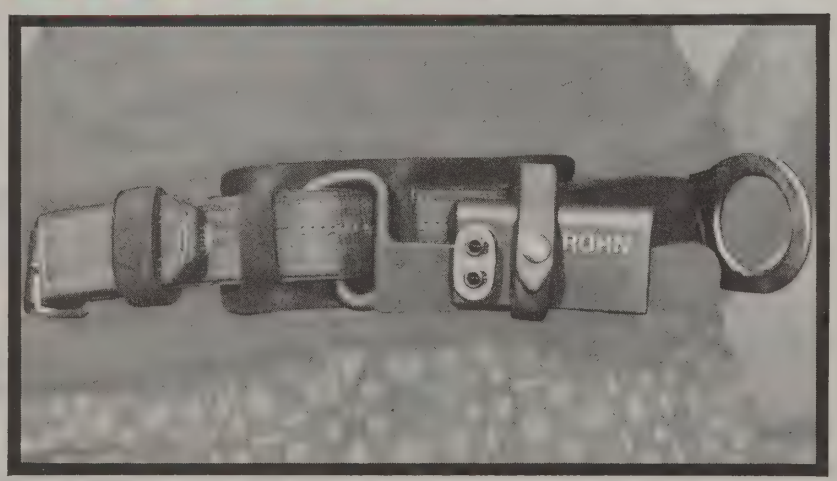
Fool-proof Design!



Note the double-lock that activates the Safety Clamp. Once locked in position for use, the Clamp cannot be removed or come off the ⅜" steel cable. Carefully note the positive gripping action of the Clamp against the cable. This means instant security for the workman should anything happen. When Safety Clamp is not in use, the lock holds it in a folded position out of the way on the Safety Belt.

the SAFETY Belt

The heavy duty Safety Belt is a combination 1¾" woven nylon web, mildew-resistant belt with elk-tanned leather. Available with added nylon cushion pad for back support, if desired. Nylon webbed belt meets U. S. Government specifications and the existing and proposed ANSI Standards and OSHA requirements. Belt holds workman always in an upright position should he even lose consciousness. Small leather tie-belt with strong snap fastener keeps Safety Clamp securely in place and completely out of the way when not in use . . . yet is available for instant use at all times when needed. Standard "D" ring encircles nylon belt for secure attachment . . . yet is removable, if desired.



ROHN-LOC is just what the industry demands . . . simple, fool-proof design with every desired feature, for complete safety. Instructions must be noted precisely to insure safe use.

✓ Check these Features

AND SPECIFICATIONS

of the NEW

ROHN® LOC SAFETY CLIMBING DEVICES...

- ✓ Safety Clamp completely made of No. 303 stainless steel.
- ✓ Gripping action of Safety Clamp is such that it securely grips in spite of grease, water or ice on the cable.
- ✓ The Safety Clamp is always available and ready for use when the Safety Belt is on; saves time, adds efficiency, and makes for easy "hook-up" at all times.
- ✓ Cable restraints hold line steady even in heavy wind; bottom safety cable bracket designed to keep cable taut with passage of time.

NOTE: Do not install towers or masts near power lines. All towers or masts should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Unarco-Rohn recommends anti-climb sections on all towers to prevent unauthorized persons from climbing towers.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

All antenna installations must be grounded per local or national codes.

- ✓ Safety Clamp slides pass cable restraints easily; never has to be removed while working along entire length of cable.
- ✓ Safety Clamp attaches to steel cable by merely pulling the locking-pins, which allow unit to open and be attached to the cable. When pin is locked, workman is secured to the cable, all without any disassembly or use of tools of any kind. Safety Clamp can be moved from cable to cable without taking anything apart whatsoever.
- ✓ Safety Clamp is "X-rayed" to insure against material defects and carefully checked before shipment.
- ✓ Top and bottom safety cable brackets are completely hot dip galvanized.
- ✓ ROHN-LOC Safety Devices can be installed on any structure under construction or already built and can be used to any height and practically every type structure in existence.
- ✓ Adaptors available for use on tubular or angle tower legs, fixed ladders, step-bolts, steel and wood poles, bridges, water towers, tanks, etc.

■ ***TO ORDER SEE CATALOG FOR PART NUMBERS — GIVE HEIGHT REQUIRED AND TYPE OF STRUCTURE.***

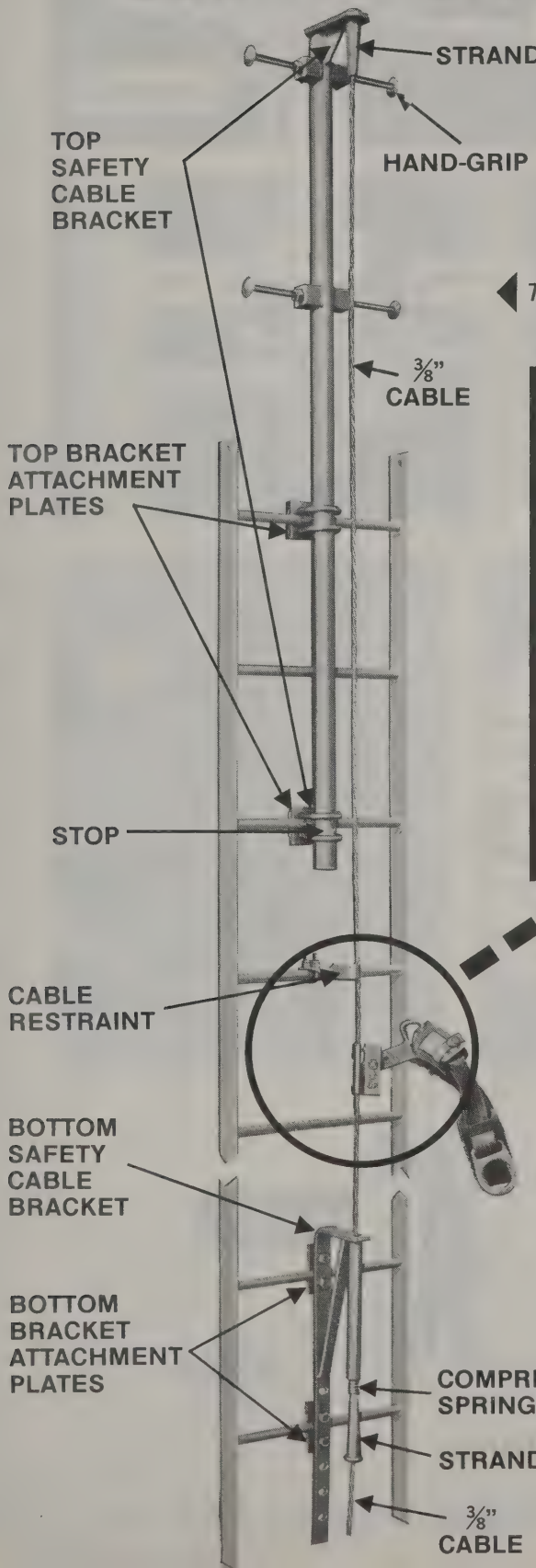
Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

FORM NO. 74477 | PRINTED IN U.S.A

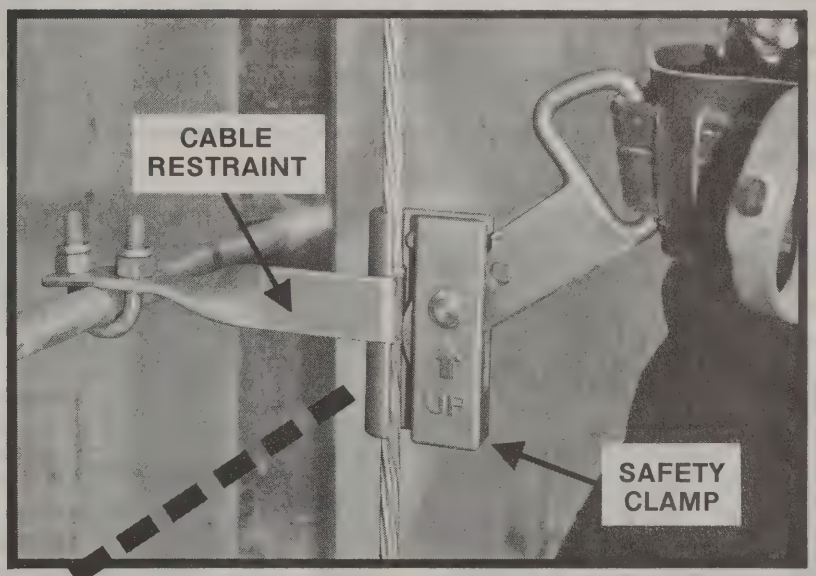
ASSEMBLY INSTRUCTIONS AND PARTS FOR

ROHN® LOC SAFETY CLIMBING DEVICES



The ROHN-LOC Safety Climbing Device is a life saving device. It's effectiveness depends on proper installation. Please take time to study these instructions and determine in advance just how each piece will be put in place before beginning.

The photograph shown here is a typical installation:



CABLE RESTRAINTS—

The cable restraint is intended to keep the cable steady in the wind.

Recommended spacing is approximately *every 20 feet but not over 30 feet.* A cable restraint should also be located at any point where the slope of the cable changes.

The restraint must be slid on the cable so that the cable is to the right of the arm. Masking tape can be used to keep the restraint in position on the cable while the cable is being installed.

MEETS OSHA SPECIFICATIONS AND STANDARDS

Patent No. 3,908,791

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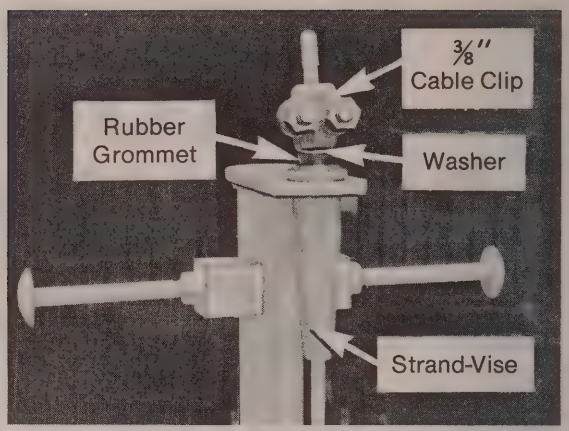
ROHN-LOC®

SAFETY CLIMBING DEVICES

INSTRUCTIONS & PARTS ASSEMBLY CONTINUED:

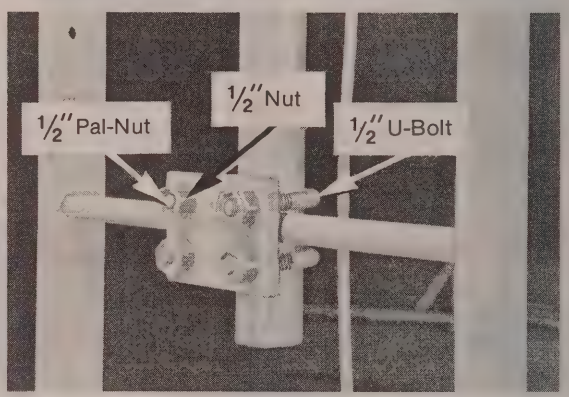


Close-up of Top Safety Cable Bracket & Attachment Plates—

The top safety cable bracket should be installed at the top of the climbing facility, as shown in the photographs.

For greatest strength, it is suggested that the top and third ladder rung be used to secure the bracket. *Ladder must be of sufficient strength to maintain safety cable and bracket.* It is advisable to carefully inspect the ladder rungs to be sure they will adequately support the top bracket. When installing, sufficient bracket should protrude above climbing facility to allow climber to maneuver.

■ *Note installation of attachment plates.*



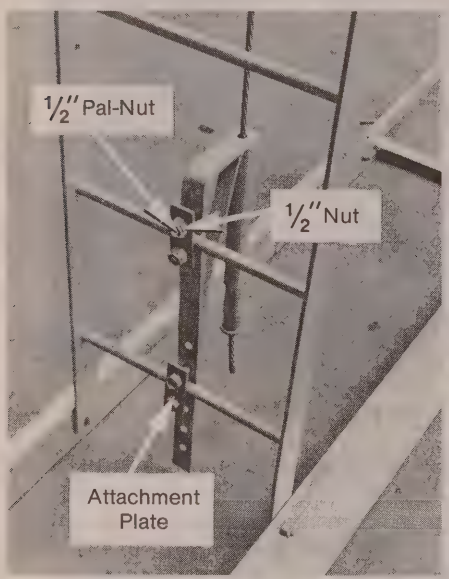
Close-up of Bottom Safety Cable Bracket—

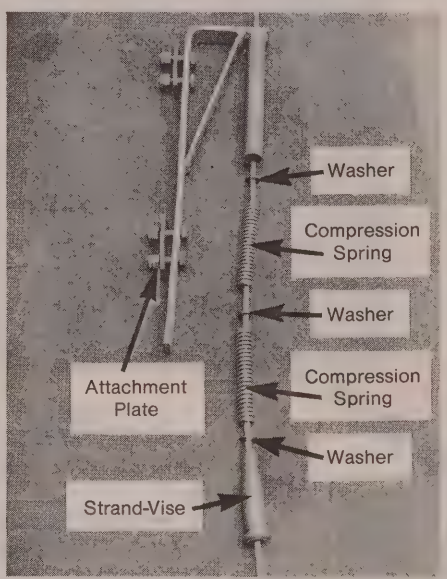
The bottom safety cable bracket should be located on the last two rungs of the ladder.

It is used to secure the cable at the bottom of the ladder and also to keep the cable in tension.

Assemble the parts as shown on the exploded photograph of the assembly.

Apply final and full tension by tilting the bracket at an angle and pushing the bracket against the bottom rung. For proper tension, the spring should be even with the tip of the tube of the bracket. (note photo)

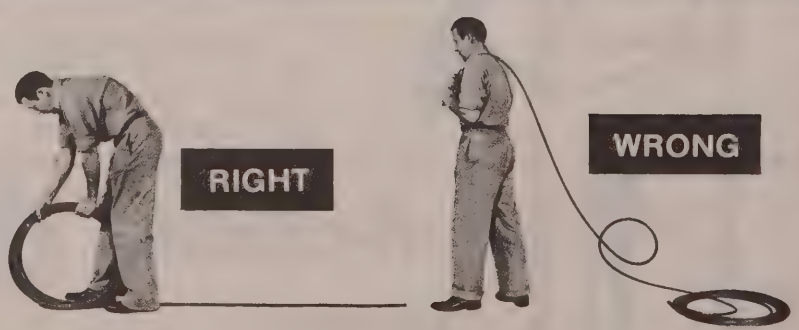




CABLE—

Cable should be uncoiled as illustrated. "kinks" in the cable will make climbing difficult, if not impossible. Also, the cable must be straight for sliding into the cable restraints.

NOTE: The entire safety climbing system must be periodically inspected and properly maintained, minimum once yearly.

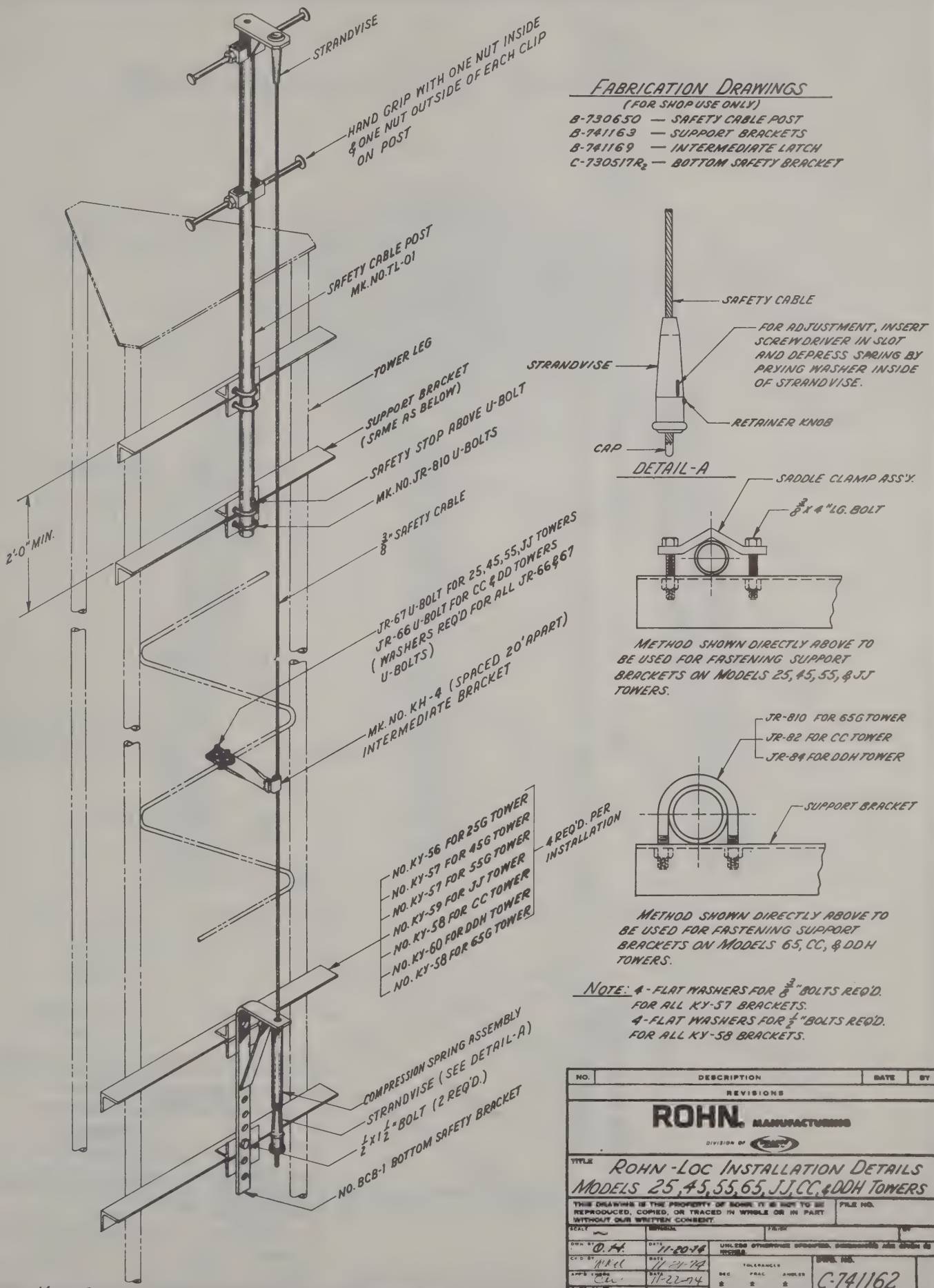


Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61601

FORM NO. 74537

PRINTED IN U.S.A.


STRANDVISE
HAND GRIP WITH ONE NUT INSIDE & ONE NUT OUTSIDE OF EACH CLIP ON POST
SAFETY CABLE POST MK.NO.TL-01
TOWER LEG
SUPPORT BRACKET (SAME AS BELOW)
SAFETY STOP ABOVE U-BOLT
MK.NO.JR-810 U-BOLTS
3/8" SAFETY CABLE
2'-0" MIN.
JR-67 U-BOLT FOR 25,45,55,JJ TOWERS
JR-66 U-BOLT FOR CC & DD TOWERS
(WASHERS REQ'D FOR ALL JR-66 & 67 U-BOLTS)
MK.NO. KH-4 (SPACED 20' APART) INTERMEDIATE BRACKET
NO. KY-56 FOR 25G TOWER
NO. KY-57 FOR 45G TOWER
NO. KY-57 FOR 55G TOWER
NO. KY-59 FOR JJ TOWER
NO. KY-58 FOR CC TOWER
NO. KY-60 FOR DDH TOWER
NO. KY-58 FOR 65G TOWER
4 REQ'D. PER INSTALLATION
COMPRESSION SPRING ASSEMBLY
STRANDVISE (SEE DETAIL-A)
1/2 x 1 1/2" BOLT (2 REQ'D.)
NO. BCB-1 BOTTOM SAFETY BRACKET

FABRICATION DRAWINGS
(FOR SHOP USE ONLY)

B-730650 — SAFETY CABLE POST
B-741163 — SUPPORT BRACKETS
B-741169 — INTERMEDIATE LATCH
C-730517 R_2 — BOTTOM SAFETY BRACKET

SAFETY CABLE
FOR ADJUSTMENT, INSERT SCREWDRIVER IN SLOT AND DEPRESS SPRING BY PRYING WASHER INSIDE OF STRANDVISE.
STRANDVISE
RETAINER KNOB
CAP

DETAIL-A

METHOD SHOWN DIRECTLY ABOVE TO BE USED FOR FASTENING SUPPORT BRACKETS ON MODELS 25, 45, 55, & JJ TOWERS.

METHOD SHOWN DIRECTLY ABOVE TO BE USED FOR FASTENING SUPPORT BRACKETS ON MODELS 65, CC, & DDH TOWERS.

NOTE: 4 - FLAT WASHERS FOR 3/8" BOLTS REQ'D. FOR ALL KY-57 BRACKETS.
4 - FLAT WASHERS FOR 1/2" BOLTS REQ'D. FOR ALL KY-58 BRACKETS.

NOTE: PAL NUTS PROVIDED FOR ALL BOLTS EXCEPT HAND GRIPS

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN MANUFACTURING
DIVISION OF

TITLE: ROHN-LOC INSTALLATION DETAILS MODELS 25, 45, 55, 65, JJ, CC, & DDH TOWERS

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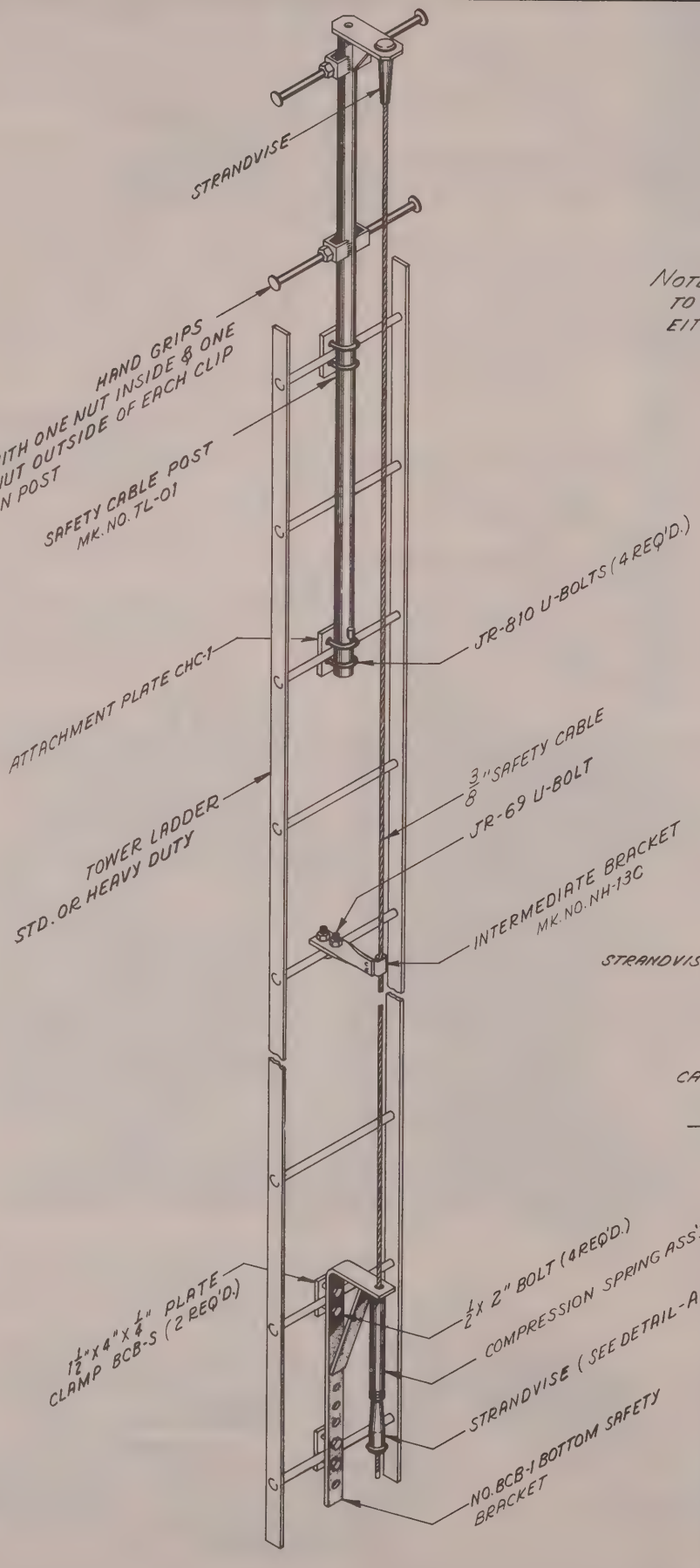
FILE NO.

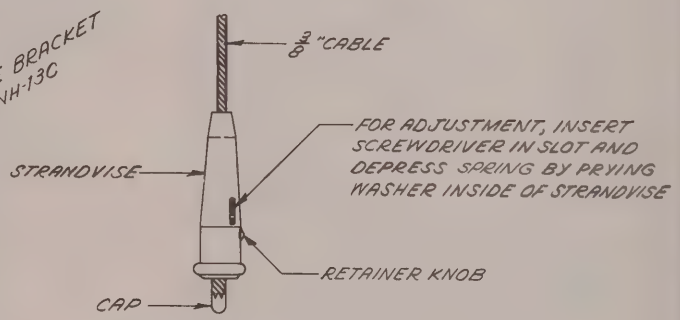
SCALE: ~	MATERIAL	FINISH
DWN BY: O.H.	DATE: 11-20-74	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES
CK'D BY: MRC	DATE: 11-21-74	TOLERANCES: DEC ± FRAC ± ANGLES ±
APP'D BY: CC	DATE: 11-22-74	DWG. NO. C-741162
APP'D BY: JO	DATE: 11-27-74	


STRANDVISE
WITH ONE NUT INSIDE & ONE NUT OUTSIDE OF EACH CLIP
HAND GRIPS
SAFETY CABLE POST MK. NO. TL-01
JR-810 U-BOLTS (4 REQ'D.)
ATTACHMENT PLATE CHC-1
TOWER LADDER STD. OR HEAVY DUTY
3/8" SAFETY CABLE
JR-69 U-BOLT
INTERMEDIATE BRACKET MK. NO. NH-13C
1 1/2" X 4" X 1/4" PLATE CLAMP BCB-S (2 REQ'D.)
1/2" X 2" BOLT (4 REQ'D.)
COMPRESSION SPRING ASS'Y
STRANDVISE (SEE DETAIL-A)
NO. BCB-1 BOTTOM SAFETY BRACKET

NOTE: THIS SAFETY DEVICE INSTALLATION TO BE USED FOR ALL ROHN TOWERS USING EITHER A HEAVY OR STANDARD LADDER.

FABRICATION DRAWINGS
(FOR SHOP USE ONLY)

C-730517 R_2 — PARTS NO. BCB-1 & BCB-S
B-740610 — PART NO. NH-13C
SK-730903B — PART NO. CHC-1
B-730650 — PART NO. TL-01


3/8" CABLE
FOR ADJUSTMENT, INSERT SCREWDRIVER IN SLOT AND DEPRESS SPRING BY PRYING WASHER INSIDE OF STRANDVISE
STRANDVISE
RETAINER KNOB
CAP

DETAIL-A

NOTE: PAL NUTS PROVIDED FOR ALL BOLTS EXCEPT HAND GRIPS

NO.	DESCRIPTION	DATE	BY
REVISIONS			

ROHN® MANUFACTURING
DIVISION OF DRESSER INDUSTRIES, INC.

TITLE: ROHN-LOC INSTALLATION DETAILS for ROHN TOWERS W/ LEG OR FACE MTD. LADDER

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FILE NO.

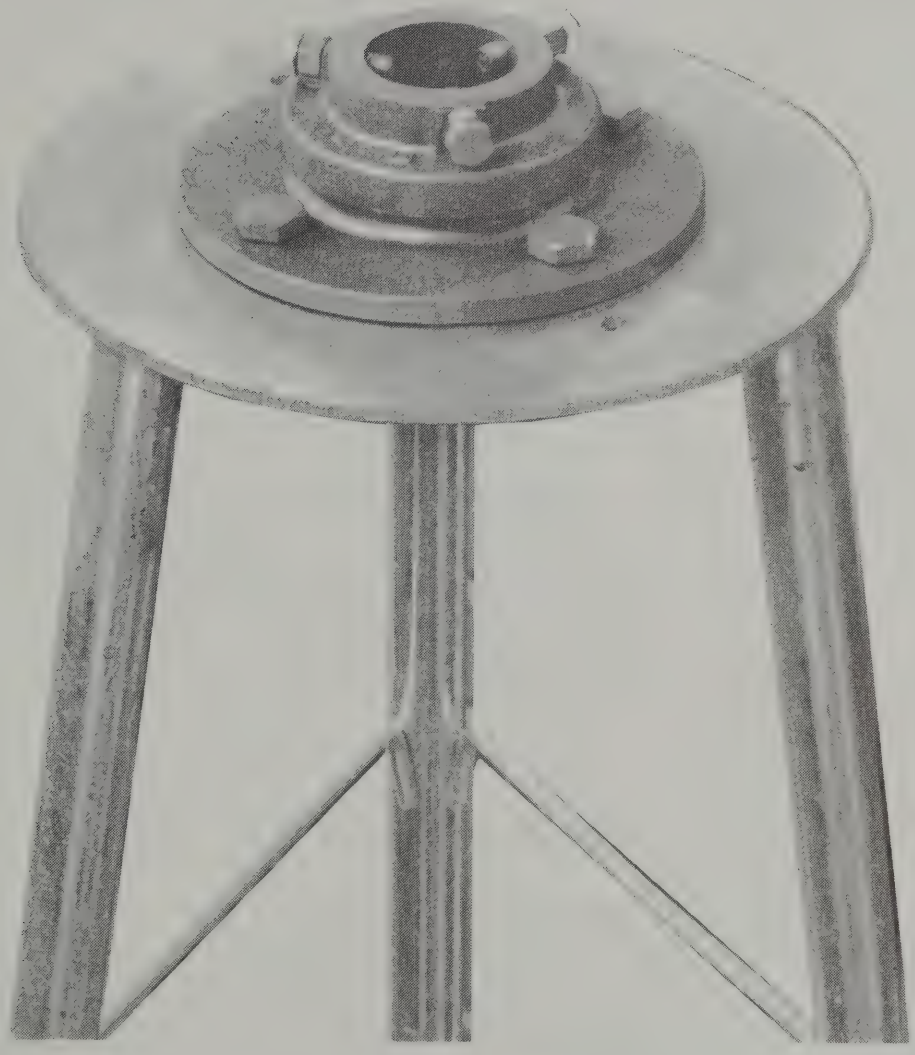
SCALE	MATERIAL	FINISH	WT
~			

DWN BY O.H	DATE 11-22-74	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D BY [illegible]	DATE 12-3-74	TOLERANCES: DEC ± FRAC ± ANGLES ±
APP'D ENGR'G CW	DATE 1-8-75	DWG. NO. C-741170
APP'D SALES C.A.W	DATE 1-8-75	

Unarco-Rohn Introduces New

TB-3 Heavy Duty Thrust Bearing

Ideally suited for heavy antenna.



- The new TB-3 heavy duty Thrust Bearing will preserve your rotor by eliminating antenna and mast stalling.
- Will support heavy antenna and mast loads.
- Stainless steel ball bearing construction for long life and corrosion resistance in all kinds of weather.
- Recommended for use with 1½" - 2" O.D. masts.
- Made of heat treated cast aluminum for extra strength.
- Three heavy set screws with locknut for tight fit and extra protection of rotor.

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

FORM NO. 76770R

ACCESSORIES

PART NUMBER			WT.
	GUY WIRE GALVANIZED 7-STRAND - PREFORMED		
1/8HS	1/8" guy wire - high strength 1,330 lbs. breaking strength		30/Mft
*3/16EHS	3/16" guy wire - extra high strength 3,990 lbs. breaking strength		68/Mft
*1/4EHS	1/4" guy wire - extra high strength 6,650 lbs. breaking strength		120/Mft
5/16EHS	5/16" guy wire - extra high strength 11,200 lbs. breaking strength		205/Mft
3/8EHS	3/8" guy wire - extra high strength 15,400 lbs. breaking strength		273/Mft
7/16EHS	7/16" guy wire - extra high strength 20,800 lbs. breaking strength		399/Mft
1/2EHS	1/2" guy wire - extra high strength 26,900 lbs. breaking strength		517/Mft
9/16EHS	9/16" guy wire - extra high strength 35,000 lbs. breaking strength		671/Mft
5/8EHS	5/8" guy wire - extra high strength 42,400 lbs. breaking strength		813/Mft
	GUY WIRE GALVANIZED 19-STRAND - PREFORMED		
3/4EHS	3/4" guy wire - extra high strength 58,300 lbs. breaking strength		1155/Mft
7/8EHS	7/8" guy wire - extra high strength 79,700 lbs. breaking strength		1581/Mft
1BS	1" bridgestrand 122,000 lbs. breaking strength		2100/Mft
	SPECIAL GALVANIZED TURNBUCKLES (HIGH STRENGTH)		
3/8TBE&E	3/8" x 6" turnbuckle 6,000 lbs. ultimate strength	eye & eye	1
3/8TBE&J		eye & jaw	1
1/2TBE&E	1/2" x 12" turnbuckle 11,000 lbs. ultimate strength	eye & eye	2
1/2TBE&J		eye & jaw	2
5/8TBE&J	5/8" x 12" turnbuckle 17,500 lbs. ultimate strength	eye & jaw	3
3/4TBE&J	3/4" x 12" turnbuckle 26,000 lbs. ultimate strength	eye & jaw	5
7/8TBE&J	7/8" x 12" turnbuckle 36,000 lbs. ultimate strength	eye & jaw	8
1TBE&J	1" x 12" turnbuckle 50,000 lbs. ultimate strengtt	eye & jaw	10
11/4TBE&J	1-1/4" x 12" turnbuckle 76,000 lbs. ultimate strength	eye & jaw	19
11/2TBE&J	1-1/2" x 12" turnbuckle 107,000 lbs. ultimate strength	eye & jaw	28
11/2X18TB	1-1/2" x 18" turnbuckle 107,000 lbs. ultimate strength	eye & jaw	40
11/2X24TB	1-1/2" x 24" turnbuckle 107,000 lbs. ultimate strength	eye & jaw	45
13/4X18TB	1-3/4" x 18" turnbuckle 140,000 lbs. ultimate strength	eye & jaw	49

NOTE: To arrive at safe working load of guy wire and turnbuckles, appropriate safety factory must be applied.

*Available in 500' or 1,000' coils. Order accordingly.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

November 1, 1977

ACCESSORIES

PART NUMBER		WT.
	ZINC PLATED CABLE CLAMPS	
1/8CCM	1/8" cable clamps, malleable	3/100
	HOT DIP GALVANIZED CABLE CLAMPS	
3/16CCM	3/16" cable clamps, malleable	5/100
3/16CCF	3/16" cable clamps, forged	15/100
1/4CCM	1/4" cable clamps, malleable	9/100
1/4CCF	1/4" cable clamps, forged	25/100
5/16CCF	5/16" cable clamps, forged	30/100
3/8CCF	3/8" cable clamps, forged	41/100
7/16CCF	7/16" cable clamps, forged	65/100
1/2CCF	1/2" cable clamps, forged	75/100
9/16CCF	9/16" cable clamps, forged	85/100
5/8CCF	5/8" cable clamps, forged	100/100
	STANDARD HOT DIP GALVANIZED THIMBLES	
1/4TH	For 1/8" or 3/16" wire with cable clamps	4/100
3/8TH	For 1/4" wire with cable clamps	8/100
	HEAVY DUTY HOT DIP GALVANIZED THIMBLES	
5/16THH	For 3/16" wire with preforms	14/100
3/8THH	For 1/4" wire with preforms or 5/16" wire with cable clamps	25/100
7/16THH	For 5/16" wire with preforms	36/100
1/2THH	For 3/8" or 7/16" wire with cable clamps or 3/8" wire with preforms	50/100
9/16THH	For 7/16" wire with preforms	51/100
5/8THH	For 1/2" or 9/16" wire with cable clamps or preforms	75/100
3/4THH	For 5/8" wire with cable clamps or preforms	150/100
7/8THH	For 3/4" wire with preforms	185/100
	SERVING TOOL	
CST1	Serving tool	3
	HOT DIP GALVANIZED ROUND PIN ANCHOR SHACKLES	
3/8S	1 ton safe working load	30/100
1/2S	2 ton safe working load	74/100
5/8S	3-1/4 ton safe working load	144/100
3/4S	4-3/4 ton safe working load	216/100
7/8S	6-1/2 ton safe working load	337/100
1S	8-1/2 ton safe working load	530/100
11/8S	9-1/2 ton safe working load	700/100
11/4S	12 ton safe working load	960/100
	GUY INSULATORS	
502	Guy strain insulator, closed end type 10,000 lbs. strength	1
504	Guy strain insulator, closed end type 12,000 lbs. strength	1½
506	Guy strain insulator, closed end type 20,000 lbs. strength	3
556	Guy strain insulator, closed end type 33,000 lbs. strength	4½
	INSULATOR CLEVISES	
J725	Use with 502, 12,000 lbs. strength, 3" length	83/100
J732	Use with 504, 12,000 lbs. strength, 5" length	150/100

NOTE: J732 can be used with 506 insulators if strength requirement does not exceed 12,000 lbs.

Refer to alphabetical/numerical price list for current prices.

January 1, 1978

ACCESSORIES

PART NUMBER		WT.
	CONCRETE ANCHORS	
GAC253	5/8" x 5' rod with 3-hole twin equalizer plates (EP25343)	11
GAC255	5/8" x 5' rod with 5-hole twin equalizer plates (EP25345)	12
GAR25	5/8" x 5' rod only with eye	8
EP25343	3-hole twin equalizer plates with nuts and bolts	3
EP25345	5-hole twin equalizer plates with nuts and bolts	4

PART NUMBER	WT.	PART NUMBER	WT.
GAC3433	20	GAC3455	25
GAC5633	60	GAC5655	65
GAC5733	115	GAC5755	125
GAC5833	200	GAC5855	220
GAC5933	300	GAC5955	310
GAC6033	360	GAC6055	380
GAC751	25	GAC1001	55
GAC753	30	GAC1003	65
GAC755	35	GAC1005	75

G6A	Torque ears	9½
G38A	Torque ears	12
G43A	Torque ears	24

	WALL ANCHORS	
GAW25	Threaded wall eye anchor (rod only) 5/8" x 18" with 5" x 5" retaining plates and nuts	3
GAWP253	GAW25 with 3-hole twin equalizer plates (EP25343)	6
GAWP255	GAW25 with 5-hole twin equalizer plates (EP25345)	7

	CONCRETE BASE BOLTS (W/DOUBLE NUTS) AND PIER PINS	
1/2X12BB	Base bolt	½
5/8X12BB	Base bolt	1
3/4X16BB	Base bolt	1½
7/8X16BB	Base bolt	3
3/4X12PP	Pier pin	1
15/16X16PP	Pier pin	3

	EARTH SCREW ANCHOR	
GAS604	6" screw plate with 4' rod and eye (holding power, 2500 lbs.)	7

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

March 15, 1977

ACCESSORIES

PART NUMBER		WT.
	GROUNDING KITS	
BGK	Base Grounding Kit 1 - 5/8" x 8' copper rod 1 - Brass tower attachment lug w/hardware 1 - Brass rod clamp 10'- #4 solid copper wire	10
BGKE	Base Grounding Kit 1 - 5/8" x 8' galvanized rod 1 - Tower attachment lug w/hardware 1 - S-58 rod clamp 5'- #6 solid copper wire	10
AGK	Anchor (Wire) Grounding Kit (For 3 Anchors) 3 - 5/8" x 8' copper rods 3 - Brass rod clamps 9 - Guy wire ground clamps 45'- #4 stranded copper wire	30
RGK	Anchor Rod Grounding Kit (For 3 Anchors) 3 - 5/8" x 8' copper rods 3 - Brass rod clamps 3 - Brass attachment lugs w/hardware 15'- #4 solid copper wire	24
AGKE	Anchor (Wire) Grounding Kit (For 3 Anchors) 3 - 5/8" x 8' galvanized rods 3 - S-58 rod clamps 9 - Guy wire ground clamps 45'- #6 solid copper wire	30
RGKE	Anchor Rod Grounding Kit (For 3 Anchors) 3 - 5/8" x 8' galvanized rods 3 - S-58 rod clamps 3 - Attachment lugs w/hardware 15'- #6 solid copper wire	24
	GROUND RODS & ACCESSORIES	
GR8G	5/8" x 8' galvanized rod w/ground wire clamp	8
GR8C	5/8" x 8' copper rod w/ground wire clamp	8
GR10C	3/4" x 10' threaded copper rod w/ground wire clamp	14
3/4C	3/4" ground rod coupling (to joint GR10C together and required when 3/4D used)	½
3/4D	3/4" ground rod driver (for use w/GR10C)	½
	COPPER WIRE	
CW6S	#6 solid	80/MFT
CW4S	#4 solid	125/MFT
CW4ST	#4 stranded	125/MFT
CW2S	#2 solid	200/MFT
CW2ST	#2 stranded	200/MFT

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SHEET D-1171
(Replaces D-932)

July 1, 1976

BIG-GRIPS (DEAD END) COMPLETE WITH END SLEEVE

PART NUMBER		WT.
	FOR 7-STRAND GALVANIZED GUY WIRE	
BG-2142	3/16" Big-Grip, 23" length, complete with GC-65303 end sleeve	28/100
BG-2144	1/4" Big-Grip, 27" length, complete with GC-65136 end sleeve	38/100
BG-2146	5/16" Big-Grip, 33" length, complete with GC-65128 end sleeve	66/100
BG-2147	3/8" Big-Grip, 37" length, complete with GC-65264 end sleeve	95/100
BG-2148	7/16" Big-Grip, 40" length, complete with GC-65265 end sleeve	140/100
BG-2115	1/2" Big-Grip, 50" length, complete with GC-65266 end sleeve	229/100
BG-2116	9/16" Big-Grip, 55" length, complete with GC-65267 end sleeve	342/100
BG-2111	5/8" Big-Grip, 64" length, complete with GC-65268 end sleeve	355/100
	FOR 19-STRAND GALVANIZED GUY WIRE	
BG-2112	3/4" Big-Grip, 76" length, complete with GC-65269 end sleeve	1080/100

NOTE: 1) End sleeves must be used on all Big-Grips. See drawing B-700607 for procedure to apply end sleeve on Big-Grips.

2) Oversized heavy duty thimbles must be used with all Big-Grips.

Refer to alphabetical/numerical price list for current prices.

F.O.B. PEORIA, ILLINOIS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

TO ACHIEVE MAXIMUM COVERAGE WITH THE END SLEEVE, THE APPLICATION SHOULD BE CONDUCTED IN THE FOLLOWING MANNER:

(BE SURE TO SELECT PROPER SIZE END SLEEVE)

1

PLACE THE SLOT SIDE OF THE END SLEEVE OVER THE LONG LEG OF THE DEAD-END.

2

DRIVE THE SLEEVE DOWNWARD UNTIL THE RODS OF SHORT LEG ARE COMPLETELY COVERED.

3

THE RODS OF THE LONG LEG SHOULD BE EVEN WITH, OR MAY EXTEND ABOVE, THE TOP EDGE OF THE SLEEVE.

R1 REVISED GUY GRIP TO BIG GRIP 7-6-76 DH

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

ROHN

TITLE: APPLICATION PROCEDURE FOR BIG-GRIP END SLEEVE

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FILE NO.

SCALE	MATERIAL	FINISH	WT
NONE			

DWN BY	DATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES
H ARCHAMBAULT	6-9-70	
CK'D BY: R Cain	DATE	TOLERANCES: DEC ± FRAC ± ANGLES ±
APP'D: PAH	DATE 6-9-70	DWG. NO. B-700607 R1

PRINTED IN U.S.A.

November 1, 1977

Unarco-Rohn

Installation Information

Bracketed #25 and #45 Towers, Non-Guyed

INSTALLATION: Select a tower location sufficiently clear and out of falling distance of power lines since every electrical and telephone wire should be considered dangerous. Tower should be installed by experienced and trained personnel. All antenna installations must be grounded per local or national codes.

BASE: The size of the concrete base for a 50' #25 tower, with a house bracket 12' aboveground, is 3' deep by 18" square. The base for a bracketed 50' #45 tower is 3' deep by 2' square. For cases of loose soil, etc., the base must be larger. Spread about 2" of gravel in bottom of hole prior to setting base assembly. The base assembly should be attached to the first 10' section prior to setting into gravel. After setting base assembly on gravel, fill another 3" with gravel around legs of base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. The base assembly and first 10' section should be leveled, plumbed, and temporarily guyed or braced while pouring the concrete. This will insure a plumb tower after installation. Check tower to assure it is plumb and level after pouring concrete. Do not pull base up into the concrete to level it and do not drive it hard into ground as this plugs leg holes and prevents moisture drainage. Crown the top of the concrete slightly to prevent water accumulation. Do not use drive rods as a base for tower when set in concrete.

HEIGHT OF TOWER & BRACKET USES: House brackets must be used and should be mounted at least 12' aboveground to be effective. The #45 tower should not extend more than 45' above a house bracket and a #25 tower should not extend more than 33' above a house bracket. (Note: Two house brackets are to be used, equally spaced, on the 80' #25 tower and 80', 90', and 100' #45 towers.) To secure the house bracket, use lag screws no smaller than 3/8" x 2". A special effort should be made to locate the house bracket such that the lag screws go through the siding into a stud. Brackets fastened to the siding only will not hold in a high wind. Tighten the house bracket U-bolts only enough to prevent looseness. Do not dent or flatten the tower upright members by excessively tightening U-bolts.

BOLTS: Nuts and bolts for #25 tower are located in tower leg. Installers are urged to use a 10" lining-up punch that tapers from about 1/2" to 5/32" diameter over a 6-1/2" length. If bolts cannot be pushed through the holes with the heel of a hand while rocking the tower, do not hammer them through. Carefully drive the punch into the hole just enough to slightly enlarge it. The leg bolt hole should be just large enough to admit the bolt. Never drill out the holes. Be sure to tighten all leg bolts until they partially flatten the sleeves, causing the sleeves to actually grip the legs inside. Always replace stripped bolts. Upon completing an installation, there should be no vertical movement between tower sections at the joints when the tower is deliberately swayed from side to side.

MISCELLANEOUS: Installation is greatly hastened and simplified by the use of an erection fixture. Do not use it to lift more than the weight of one tower section at a time. If the antenna is to be fixed and a set screw used in the mast housing, or if a rotator is to be mounted on a short length of mast above the tower top section, install a TB-50 tower bushing at bottom of the mast housing to center the mast in the mast housing. These bushings are "peened" in place. If the rotator is to be mounted inside the top section of the tower, do not install a TB-50 tower bushing at bottom of mast housing. Anti-climb sections are recommended on all towers to prevent unauthorized persons from climbing tower.

CAUTION ... Be sure hinge bolts on hinged type accessories are loosened before attempting to hinge tower over. Hinge up no more than 33' of #25 or 45' of #45 tower only. All hinged type bases are recommended to be used to raise tower only without antenna. When raising and lowering tower on any hinge type base or hinge section, the loads applied for hinging the tower must be applied equally on both sides of the tower in order to reduce the possibility of twist on tower and hinges at the base. Special care must be taken to avoid the use of raising and lowering methods which may cause damage to tower or hinges.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.

All information is based upon average antennas, with not more than 2 square feet of area in a 20 psf (70 mph) wind load and a safety factor, with antenna installed at tower apex.

THESE ARE FACTORY TESTED INSTRUCTIONS. PLEASE FOLLOW CAREFULLY.

November 1, 1977

Unarco-Rohn

Installation Information

Bracketed #20 Tower, Non-Guyed

INSTALLATION: Select a tower location sufficiently clear and out of falling distance of power lines since every electrical and telephone wire should be considered dangerous. Tower should be installed by experienced and trained personnel. All antenna installations must be grounded per local or national codes.

BASE: The size of the concrete base for a 40' #20 tower, with a house bracket 12' aboveground, is 3' deep by 18" square. For cases of loose soil, etc., the base must be larger. Spread about 2" of gravel in bottom of hole prior to setting base assembly. The base assembly should be attached to the first 10' section prior to setting into gravel. After setting base assembly on gravel, fill another 3" with gravel around legs of base. This allows the tower base legs to extend the required amount below the base of the concrete, thus allowing for drainage of moisture into the gravel. The base assembly and first 10' section should be leveled, plumbed, and temporarily guyed or braced while pouring the concrete. This will insure a plumb tower after installation. Check tower to assure it is plumb and level after pouring concrete. Do not pull base up into the concrete to level it and do not drive it hard into ground as this plugs leg holes and prevents moisture drainage. Crown the top of the concrete slightly to prevent water accumulation. Do not use drive rods as a base for tower when set in concrete.

HEIGHT OF TOWER & BRACKET USES: House brackets must be used and should be mounted at least 12' aboveground to be effective. The #20 tower should not extend more than 28' above a house bracket. To secure the house bracket, use lag screws no smaller than 3/8" x 2". A special effort should be made to locate the house bracket such that the lag screws go through the siding into a stud. Brackets fastened to the siding only will not hold in a high wind. Tighten the house bracket U-bolts only enough to prevent looseness. Do not dent or flatten the tower upright members by excessively tightening U-bolts.

BOLTS: Nuts and bolts are located in the tower leg. Installers are urged to use a 10" lining-up punch that tapers from about 1/2" to 5/32" diameter over a 6-1/2" length. If bolts cannot be pushed through the holes with the heel of a hand while rocking the tower, do not hammer them through. Carefully drive the punch into the hole just enough to slightly enlarge it. The leg bolt hole should be just large enough to admit the bolt. Never drill out the holes. Be sure to tighten all leg bolts until they partially flatten the sleeves, causing the sleeves to actually grip the legs inside. Always replace stripped bolts. Upon completing an installation, there should be no vertical movement between tower sections at the joints when the tower is deliberately swayed from side to side.

MISCELLANEOUS: Installation is greatly hastened and simplified by the use of an erection fixture. Do not use it to lift more than the weight of one tower section at a time. If the antenna is to be fixed and a set screw used in the mast housing, or if a rotator is to be mounted on a short length of mast above the tower top section, install a TB-50 tower bushing at bottom of the mast housing to center the mast in the mast housing. These bushings are "peened" in place. If the rotator is to be mounted inside the top section of the tower, do not install a TB-50 tower bushing at bottom of the mast housing. Anti-climb sections are recommended on all towers to prevent unauthorized persons from climbing tower.

CAUTION ... Be sure hinge bolts on hinged type accessories are loosened before attempting to hinge tower over. Hinge up no more than 28' of #20 tower only. All hinged type bases are recommended to be used to raise tower only without antenna. When raising and lowering tower on any type of hinge base or hinge section, the loads applied for hinging the tower must be applied equally on both sides of tower in order to reduce the possibility of twist on tower and hinges at the base. Special care must be taken to avoid the use of raising and lowering methods which may cause damage to tower or hinges.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year and remarked with hazard and warning labels to insure safety and proper performance.

All information is based upon average antennas, with not more than 2 square feet of area in a 20 psf (70 mph) wind load and a safety factor, with antenna installed at tower apex.

THESE ARE FACTORY TESTED INSTRUCTIONS. PLEASE FOLLOW CAREFULLY.

Self-Supporting Height of Towers

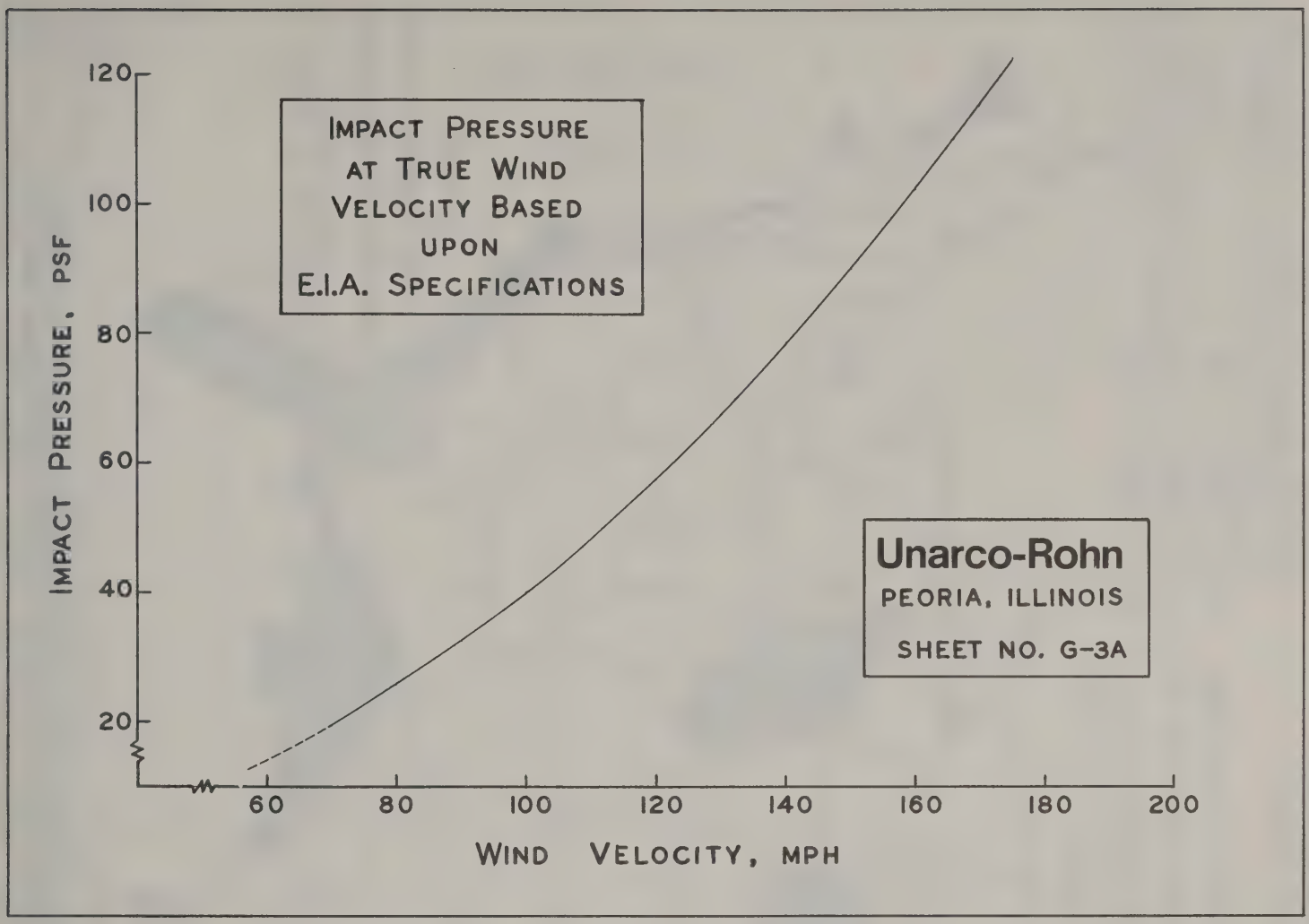
Tower Model	Wind Load = 20 psf								Wind Load = 30 psf								Wind Load = 40 psf								Wind Load = 50 psf							
	No Ice				½" Ice				No Ice				½" Ice				No Ice				½" Ice				No Ice				½" Ice			
	Antenna Area, ft.²								Antenna Area, ft.²								Antenna Area, ft.²								Antenna Area, ft.²							
	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10
20	39.1	31.9	23.8	15.8	26.1	22.7	18.6	13.7	32.0	24.9	17.6	11.1	21.3	18.0	14.1	9.9	27.7	20.7	14.1	8.6	18.5	15.2	11.5	7.8	24.8	18.0	11.7	7.0	16.5	13.3	9.8	6.4
25	44.7	37.6	29.4	20.4	29.8	26.5	22.3	17.1	36.6	29.5	21.9	14.4	24.4	21.1	17.2	12.5	31.7	24.8	17.7	11.2	21.1	17.9	14.1	9.9	28.3	21.5	14.8	9.1	18.9	15.7	12.1	8.2
45	56.8	50.4	42.3	32.2	37.9	35.0	31.1	25.7	46.4	40.1	32.4	23.6	31.0	28.1	24.3	19.3	40.2	34.0	26.7	18.7	26.9	24.0	20.3	15.7	36.0	29.8	22.8	15.5	24.0	21.2	17.6	13.2
55	71.1	65.4	57.8	47.4	49.2	46.5	42.6	37.0	58.1	52.5	45.1	35.6	40.3	37.5	33.8	27.8	50.4	44.8	37.7	28.8	34.9	32.2	28.5	23.4	45.1	39.5	32.6	24.3	31.2	28.5	24.9	20.0
65	83.9	79.7	73.8	65.1	62.4	60.0	56.7	51.6	68.6	64.5	58.7	50.4	51.0	48.7	45.4	40.5	59.5	55.4	49.7	41.8	44.3	41.9	38.7	33.9	53.3	49.1	43.6	35.9	39.6	37.3	34.1	29.4

Notes:

1) Calculations are based upon steel having a yield strength of 50,000 PSI.
2) Calculations do not include the weight or wind on any transmission lines.
3) Calculations are based upon E.I.A. Standards.
4) Antennas are considered to be at the apex of the tower.
5) This drawing supercedes Chart No. 660-MH.

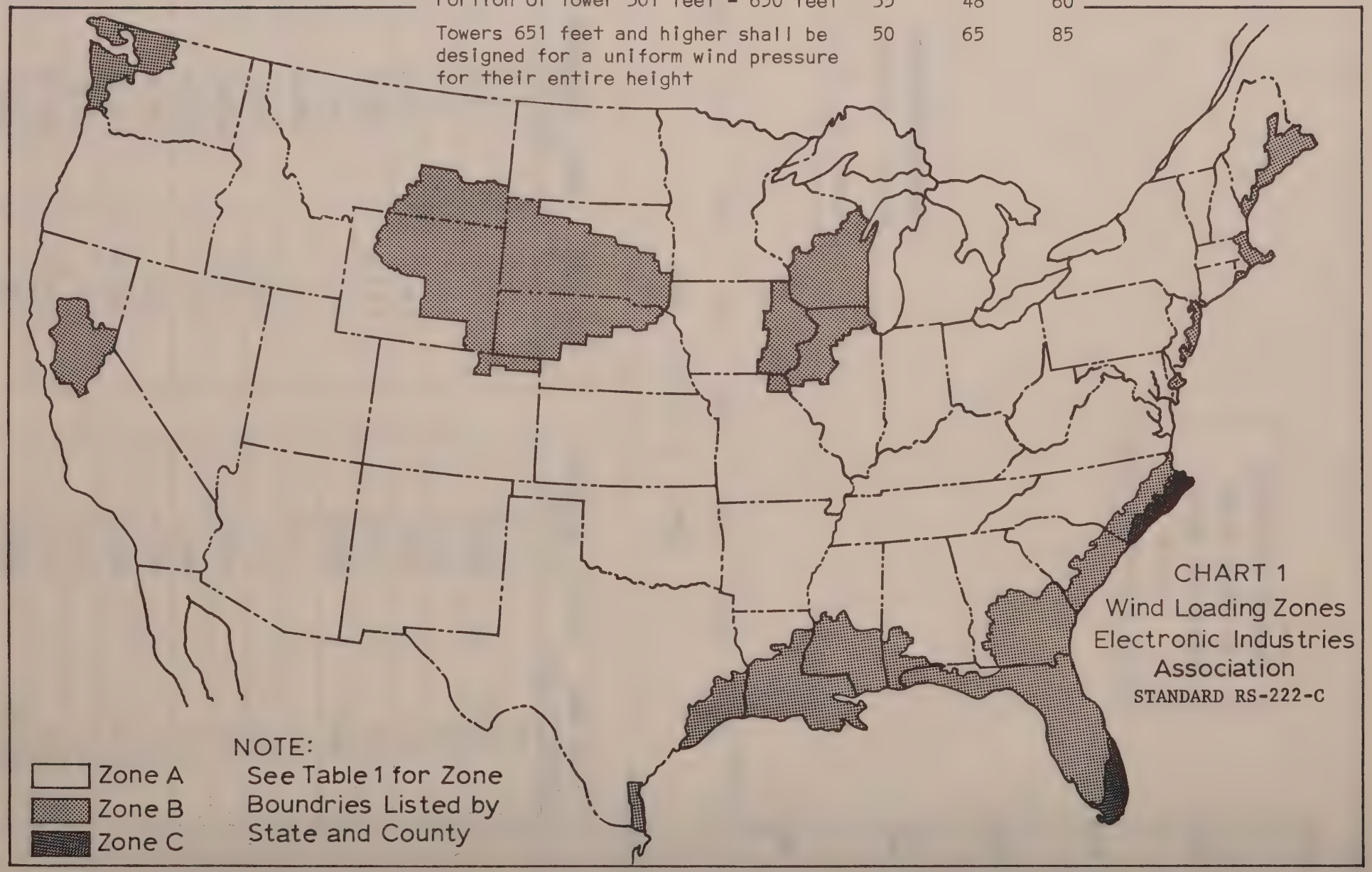
Dwg. No. B-691119-L 11-24-69

Rohn Mfg.
Peoria, Illinois



TRUE WIND VELOCITY, MPH	IMPACT PRESSURE, LBS./SQ.FT.
70	19.6
70.7	**20.0**
75	22.5
80	25.6
85	28.9
86.6	**30.0**
90	32.4
95	36.1
100	**40.0**
105	44.1
110	48.4
111.8	**50.0**
115	52.9
120	57.6
122.5	**60.0**
125	62.5

TRUE WIND VELOCITY, MPH	IMPACT PRESSURE, LBS./SQ.FT.
130	67.6
132.3	**70.0**
135	72.9
140	78.4
141.4	**80.0**
145	84.1
150	**90.0**
155	96.1
158.1	**100.0**
160	102.4
165	108.9
165.8	**110.0**
170	115.6
173.2	**120.0**
175	122.5



Location of wind loading zones based on 50 year mean recurrence interval chart from distribution of extreme winds in the United States by H. C. S. Thom published in the proceedings of the American Society of Civil Engineers. April 1960.

C-640714R1

GENERAL DATA

WIND LOAD (LBS. PER SQ.FT.)			TOWER MODEL NO.25	TOWER MODEL NO. 45	TOWER MODEL NO.55
	30 PSF	MAXIMUM TOWER HEIGHT	200′	300′	400′
		MAXIMUM GUY SPACING	35′	40′	50′
		GUY WIRE SIZES	3/16″ E.H.S.	3/16″ E.H.S. 1/4″ E.H.S.	1/4″ E.H.S.
	40 PSF	MAXIMUM TOWER HEIGHT	180′	240′	350′
		MAXIMUM GUY SPACING	30′	35′	45′
		GUY WIRE SIZES	3/16″ E.H.S.	1/4″ E.H.S.	1/4″ E.H.S. 5/16″ E.H.S.
	50 PSF	MAXIMUM TOWER HEIGHT	150′	200′	300′
		MAXIMUM GUY SPACING	25′	30′	40′
		GUY WIRE SIZES	3/16″ E.H.S. 1/4″ E.H.S.	1/4″ E.H.S.	1/4″ E.H.S. 5/16″ E.H.S.
	ALLOWABLE LATERAL THRUST AT MAXIMUM TOWER HEIGHT		180 LBS. AT 30 PSF 240 LBS. AT 40 PSF 300 LBS. AT 50 PSF	240 LBS. AT 30 PSF 320 LBS. AT 40 PSF 400 LBS. AT 50 PSF	300 LBS. AT 30 PSF 400 LBS. AT 40 PSF 500 LBS. AT 50 PSF
	EQUIVALENT AREA OF ABOVE THRUST, SQ.FT.		6	8	10
	TRANSMISSION LINES		1 — 7/8″ DIA. 1 — 1/2″ DIA.	1 — 7/8″ DIA. 1 — 1/2″ DIA.	1 — 7/8″ DIA. 1 — 1/2″ DIA.

THE ABOVE SPECIFICATIONS COVER ONLY A SMALL RANGE OF TOWERS. FOR TOWER LOADING REQUIREMENTS NOT GIVEN ABOVE OR ELSEWHERE IN THIS CATALOG, CONTACT OUR SALES DEPARTMENT.

R1	UPDATED DESIGN DATA	4-15-77	RLH
NO.	REVISION DESCRIPTION	DATE	BY

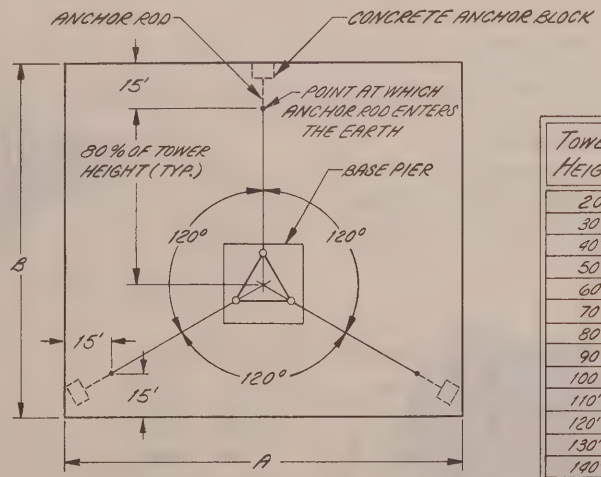
DRAWN AED
CHECKED ck
APPROVED DAK
DATE 7-24-64
SCALE NONE

TITLE: GENERAL DATA

ROHN MANUFACTURING
PEORIA, ILLINOIS

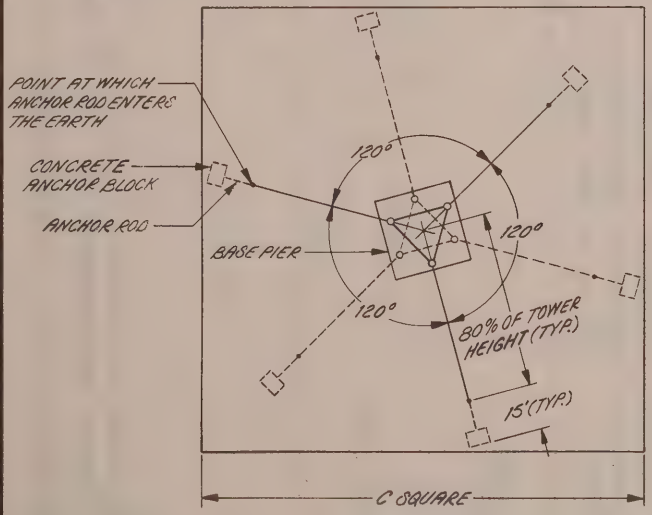
DRAWING NO. C-640714R1

ILLINOIS B/P 1980-H



LAYOUT A

THIS IS THE MINIMUM AREA OF LAND REQUIRED. HOWEVER, THIS AREA WILL NOT ALWAYS PERMIT ORIENTING TOWER INTO THE BEST POSITION FOR ANTENNA PATH DIRECTION.



LAYOUT B

THIS IS THE MINIMUM AREA OF LAND REQUIRED TO PERMIT ORIENTING THE TOWER IN ANY POSITION FOR ANTENNA PATH DIRECTION.

TOWER HEIGHT	LAYOUT A			LAYOUT B	
	ACRES	A	B	ACRES	C
20'	.08	60'	55'	.10	65'
30'	.12	75'	70'	.15	80'
40'	.17	90'	80'	.21	95'
50'	.21	100'	90'	.28	110'
60'	.28	115'	105'	.39	130'
70'	.35	130'	115'	.48	145'
80'	.43	145'	130'	.59	160'
90'	.50	155'	140'	.70	175'
100'	.59	170'	150'	.83	190'
110'	.70	185'	165'	1.01	210'
120'	.80	200'	175'	1.16	225'
130'	.94	215'	190'	1.32	240'
140'	1.04	225'	200'	1.49	255'
150'	1.16	240'	210'	1.67	270'
160'	1.32	255'	225'	1.93	290'
170'	1.46	270'	235'	2.14	305'
180'	1.64	285'	250'	2.35	320'
190'	1.76	295'	260'	2.58	335'
200'	1.92	310'	270'	2.81	350'
210'	2.13	325'	285'	3.14	370'
220'	2.31	340'	295'	3.40	385'
230'	2.50	350'	310'	3.67	400'
240'	2.68	365'	320'	3.95	415'
250'	2.68	380'	330'	4.24	430'
260'	3.13	395'	345'	4.65	450'
270'	3.34	410'	355'	4.96	465'
280'	3.57	420'	370'	5.29	480'
290'	3.80	435'	380'	5.63	495'
300'	4.03	450'	390'	5.97	510'
310'	4.33	465'	405'	6.45	530'
320'	4.53	475'	415'	6.82	545'
330'	4.84	490'	430'	7.20	560'
340'	5.10	505'	440'	7.59	575'
350'	5.37	520'	450'	8.00	590'
360'	5.71	535'	465'	8.54	610'
370'	5.94	545'	475'	8.97	625'
380'	6.30	560'	490'	9.40	640'
390'	6.60	575'	500'	9.85	655'
400'	6.91	590'	510'	10.31	670'
410'	7.23	600'	525'	10.93	690'
420'	7.55	615'	535'	11.41	705'
430'	7.96	630'	550'	11.90	720'
440'	8.29	645'	560'	12.40	735'
450'	8.69	660'	570'	12.91	750'
460'	9.00	670'	585'	13.61	770'
470'	9.36	685'	595'	14.15	785'
480'	9.80	700'	610'	14.69	800'
490'	10.18	715'	620'	15.25	815'
500'	10.99	725'	630'	15.81	830'

GENERAL NOTES

1. SPACE ALLOWANCE HAS BEEN MADE FOR CONCRETE ANCHORS AS SHOWN ON LAYOUT.
2. INFORMATION IN CHART IS BASED ON OUTER ANCHORS BEING LOCATED 80% OF TOWER HEIGHT FROM BASE AND ORIENTED 120° APART.
3. DIMENSION SHOWN ON TOWER ASSEMBLY DRAWING IS FROM TOWER BASE TO POINT AT WHICH ANCHOR ROD ENTERS THE EARTH.
4. REFER TO DWG. NO. C-620643 R8 FOR DETAILS OF CONCRETE ANCHOR BLOCKS.
5. REFER TO DWG. NO. C-610621 R1 FOR DETAILS OF CONCRETE BASE PIERS
6. REFER TO DWG. NO. C-660915-0 FOR DETAILS OF ANCHOR RODS.
7. ALL INFORMATION ABOVE IS BASED ON LEVEL GROUND SITE CONDITIONS.
8. DUE TO VARIABLES INVOLVED IN POOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

NO.	DESCRIPTION	DATE	BY
R2	ADDED NOTE 8	7-6-76	OH
R1	REDRAWN	4-15-75	MEH

REVISIONS

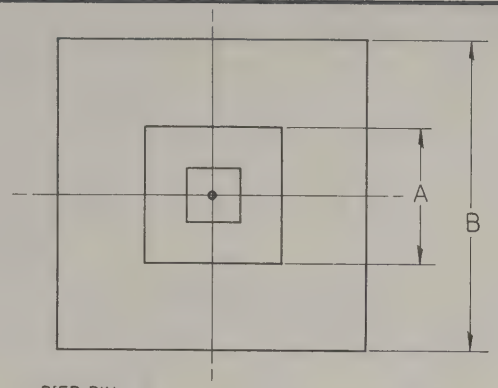
ROHN® MANUFACTURING
DIVISION OF CHANCE

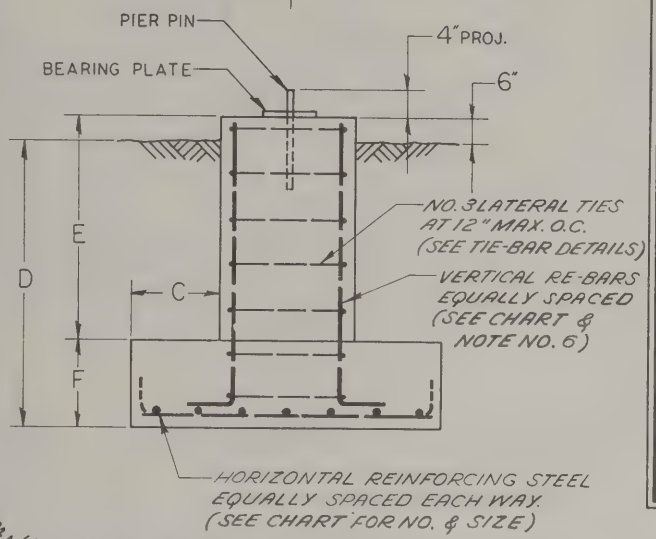
TITLE: LAND AREA REQUIREMENTS FOR 80% GUYED TOWERS

THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.

FILE NO.

SCALE: NONE	MATERIAL	FINISH	WT.
DWN. BY: MEH	DATE: 7-8-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY: BR	DATE: 4-15-75	TOLERANCES: DEC. ± FRAC. ± ANGLES ±	DWG. NO. C-640531 R2
APP'D. ENGRG.	DATE: 4-15-75		
APP'D. SALES	DATE: 4-16-75		



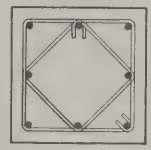

PIER PIN
BEARING PLATE
4" PROJ.
6"
NO. 3 LATERAL TIES AT 12" MAX. O.C. (SEE TIE-BAR DETAILS)
VERTICAL RE-BARS EQUALLY SPACED (SEE CHART & NOTE NO. 6)
D
E
C
F
HORIZONTAL REINFORCING STEEL EQUALLY SPACED EACH WAY. (SEE CHART FOR NO. & SIZE)

CONCRETE BASE SCHEDULE

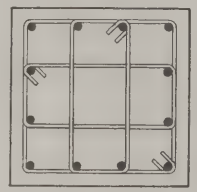
CB NO.	TOWER BASE REACTION	DIMENSIONS A	B	C	D	E	F	BEARING PLATE	CONC. (CU. YDS.)	VERTICAL BARS (NO. & SIZE)	HORIZ. BARS (NO. & SIZE)
1	14000	2'-0	2'-0	0	4'-0	0	0	BP-6	.70	4-NO.6	NONE
2	22000	2'-6	2'-6	0	4'-0	0	0	BP-6	1.00	4-NO.6	NONE
3	32000	3'-0	3'-0	0	4'-0	0	0	BP-6	1.50	4-NO.6	NONE
4	44000	3'-6	3'-6	0	4'-0	0	0	BP-6	2.10	4-NO.6	NONE
5	58000	2'-0	4'-0	1'-0"	4'-0	3'-3	1'-3	BP-6	1.22	4-NO.6	6-NO.4
6	74000	2'-0	4'-6	1'-3"	4'-0	3'-3	1'-3	BP-6	1.42	4-NO.6	6-NO.5
7	90000	2'-0	5'-0	1'-6	4'-6	3'-9	1'-3	BP-10	1.70	3-NO.5	6-NO.5
8	109000	2'-0	5'-6	1'-9	4'-6	3'-9	1'-3	BP-10	2.00	8-NO.6	5-NO.5
9	130000	2'-0	6'-0	2'-0	4'-6	3'-6	1'-6	BP-10	2.50	8-NO.6	7-NO.5
10	150000	2'-0	6'-6	2'-3	4'-6	3'-6	1'-6	BP-10	2.90	3-NO.6	3-NO.5
11	173000	2'-6	7'-0	2'-3	5'-0	3'-9	1'-9	BP-15	4.00	8-NO.7	8-NO.6
12	198000	2'-6	7'-6	2'-6	5'-0	3'-9	1'-9	BP-15	4.50	8-NO.7	8-NO.6
13	224000	2'-6	8'-0	2'-9	5'-0	3'-9	1'-9	BP-15	5.00	8-NO.7	9-NO.6
14	251000	3'-0	8'-6	2'-9	5'-0	3'-6	2'-0	BP-15	6.50	12-NO.7	9-NO.7
15	279000	3'-0	9'-0	3'-0	5'-0	3'-6	2'-0	BP-15	7.20	12-NO.7	10-NO.7

R2 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

CB1 THRU CB6



CB7 THRU CB13



CB14 & CB-15

TIE BAR DETAILS

GENERAL NOTES:

1. BASE PIER DESIGNED FOR AN ALLOWABLE NET SOIL PRESSURE OF 4000 PSF.
2. CONCRETE - 3000 PSI MIN. ULT. STRENGTH AT 28 DAYS.
3. REINFORCING STEEL - ASTM A-615 GRADE 40 DEFORMED BARS.
4. MIN. COVER ON ALL REINFORCING STEEL IS 3".
5. ALL FORMS MUST BE REMOVED FROM CONCRETE BEFORE PLACING COMPACTED BACKFILL.
6. VERTICAL REINFORCING STEEL MAY BE PLACED WITH AN OPTIONAL STANDARD ACI 90° BEND AT BOTTOM.
7. FOUNDATION DESIGN PER E.I.A. STANDARDS.
8. BEARING PLATE PROVIDED ONLY ON TOWERS WITH TAPERED BASE.

NO.	DESCRIPTION	DATE	BY
R2	ADDED NOTE	7-6-76	DH
R1	RE-DRAWN - SUPERSEDES C-610621D	2-26-75	DH

REVISIONS

ROHN® MANUFACTURING
DIVISION OF VALMONT INDUSTRIES, INC.

TITLE
CONCRETE BASE SCHEDULE

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FILE NO.

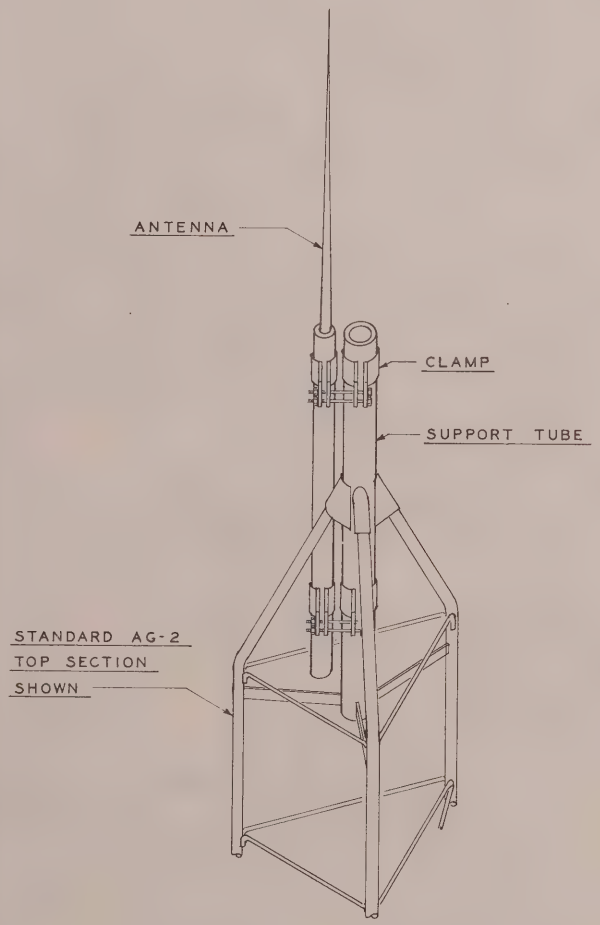
SCALE	MATERIAL	FINISH	WT.
~			

DWN. BY: DH	DATE: 2-26-75	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D. BY: WDH	DATE: 3-7-75	
APP'D. ENGRG. GW	DATE: 3-7-75	TOLERANCES: DEC. ±, FRAC. ±, ANGLES ±
APP'D. QA/QR	DATE: 3-15-75	DWG NO. C-610621 R4

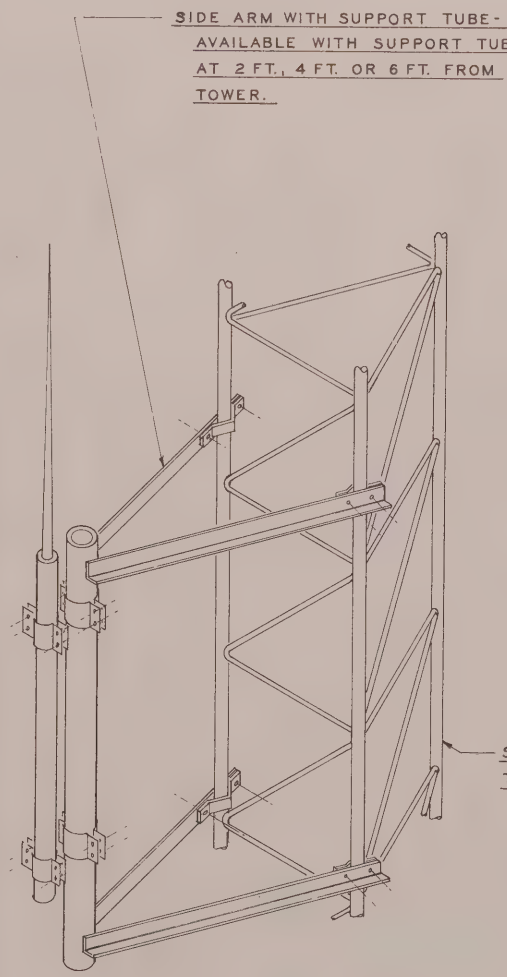
GAF 860-250 2-72 48194

PRINTED IN U.S.A.

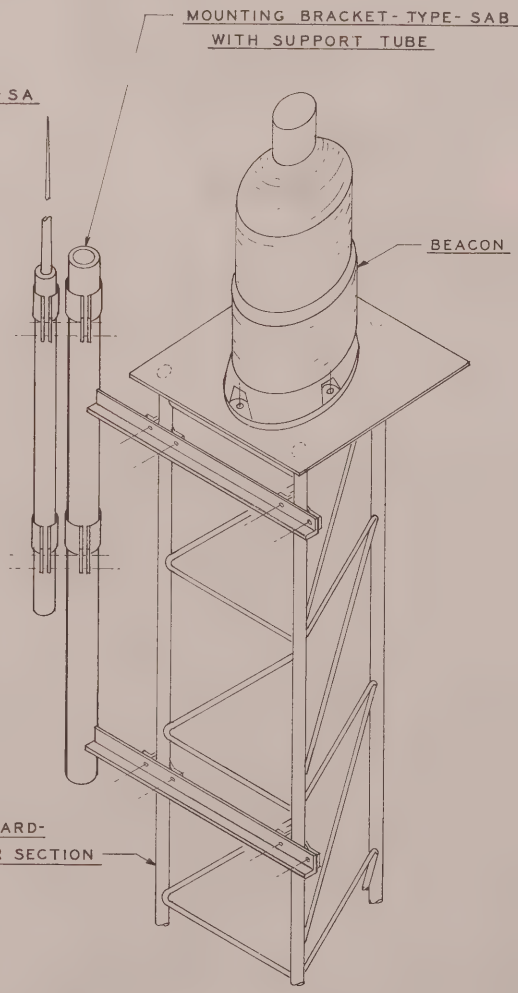
C-661 004



TOP MOUNTING



SIDE MOUNTING-
(AT ANY LEVEL)



TOP MOUNTING -
(WITH BEACON)

NO.	REVISION	BY	DATE
1	REDRAWN	CK	10-12-66

DRAWN CK
CHECKED
APPROVED J.A.R.
DATE 10-12-66
SCALE NONE

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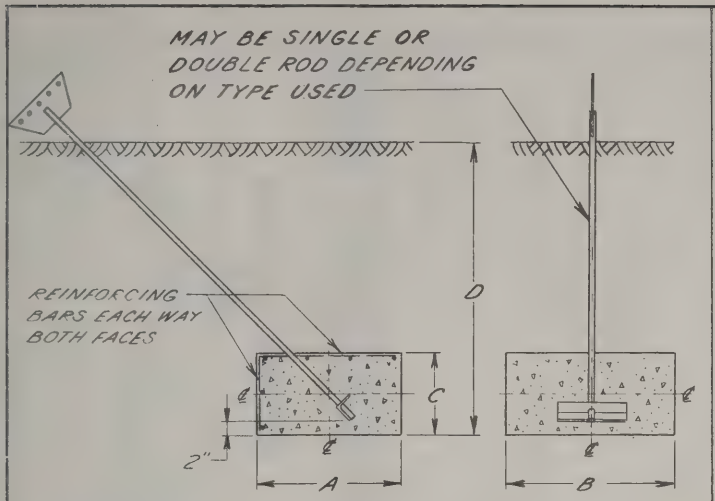
ANTENNA MOUNTING DETAILS

ROHN MANUFACTURING
PEORIA, ILLINOIS

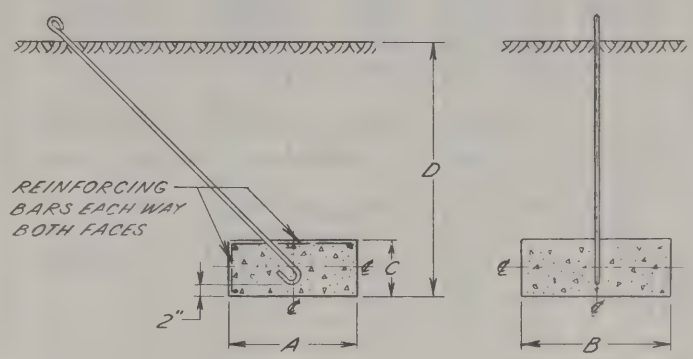
DRAWING NO. C-661 004

1)- THIS DRAWING SUPERCEDES DRAWINGS C-060262 & C-060221-J-R

ILLINOIS B/P CO 159M



ANCHOR DETAIL FOR GAC-34, 56, 57, & 58
SHOWN ON DWG. NO. C-660415



ANCHOR DETAIL FOR GAC-25

R9 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

General Notes

* *1. ANCHOR DESIGN ASSUMES E.I.A. NORMAL SOIL.
2. CONCRETE, 3,000 PSI MINIMUM ULTIMATE STRENGTH.
3. ASTM A-615 GRADE 40 DEFORMED REBARS.
4. MINIMUM CONCRETE COVER ON ALL REBARS IS 2".
5. MINIMUM ½" DIAMETER REINFORCING BARS IN ALL ANCHORS WITH MAXIMUM SPACING OF 12" EXCEPT NO. 10 BLOCK MAXIMUM SPACING OF 6".
6. ALL FORMS MUST BE REMOVED FROM CONCRETE BEFORE PLACING COMPACTED BACKFILL.

CONCRETE ANCHOR DATA

DEPTH, D (FT.)	ROD NO.	BLOCK NO.	ANCHOR DIMENSIONS (FT.) A	B	C	WEIGHT CONCRETE (LBS)	CONCRETE (CU. YDS.)	UPLIFT * CAPACITY (LBS)	LATERAL CAPACITY (LBS.)
3	GAC-25	3a	1.5	1.5	1	310	.08	900	1,500
		3b	2	2	1	560	.15	1,320	2,000
		3c	2.5	2.5	1	870	.23	1,810	2,500
		3d	3	3	1	1,260	.33	2,535	3,000
		3e	3	4	1	1,680	.44	3,020	4,000
4	GAC-34	4a	3	3	1.5	1,890	.50	3,490	5,850
		4b	3	4	1.5	2,520	.67	4,360	7,800
		4c	3	5	1.5	3,150	.84	4,985	9,750
		4d	3	6	1.5	3,780	1.00	6,090	11,700
		4e	4	6	1.5	5,050	1.33	7,660	11,700
6	GAC-56	6a	3	4	1.5	2,520	.67	10,035	12,600
		6b	3	5	1.5	3,150	.84	11,600	15,750
		6c	3	6	1.5	3,780	1.00	13,150	18,900
		6d	4	6	1.5	5,050	1.33	15,850	18,900
8	GAC-57	8a	3	5	1.5	3,150	.84	22,150	21,750
		8b	3	6	1.5	3,780	1.00	24,700	26,100
		8c	4	6	1.5	5,050	1.33	28,500	26,100
		8d	6	6	2.0	10,800	2.67	33,380	33,600
10	GAC-58	10a	3	6	2.0	5,040	1.33	37,450	43,200
		10b	4	6	2.0	6,720	1.78	42,700	43,200
		10c	4	7	2.0	7,840	2.07	46,800	50,400
		10d	5	7	2.0	9,800	2.59	52,350	50,400
		10e	5	9	2.0	12,600	3.33	61,700	64,800

* INCLUDES SAFETY FACTOR OF 2

* * NORMAL SOIL IS A COHESIVE TYPE SOIL WITH A HORIZONTAL BEARING CAPACITY OF 400 POUNDS PER SQUARE FOOT PER LINEAL FOOT OF DEPTH. ROCK, NON-COHESIVE SOILS, OR SATURATED OR SUBMERGED SOILS ARE NOT TO BE CONSIDERED AS NORMAL.

NO.	DESCRIPTION	DATE	BY
R9	ADDED NOTE	7-6-76	OH
R8	REVISE DESIGN NOTE 1.	1-14-75	WSH
R7	REVISE DESIGN NOTE 1. & TITLE BLOCK	11-21-74	WSH
R6	GAC-25 WAS GA-25	12-7-73	JER
R5	REVISED FOR EIA RS-222-B	9/9/73	GLS

REVISIONS

ROHN® MANUFACTURING
DIVISION OF HEADY

TITLE: STANDARD CONCRETE ANCHORS

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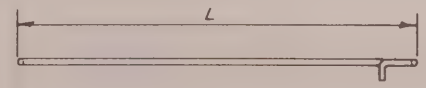
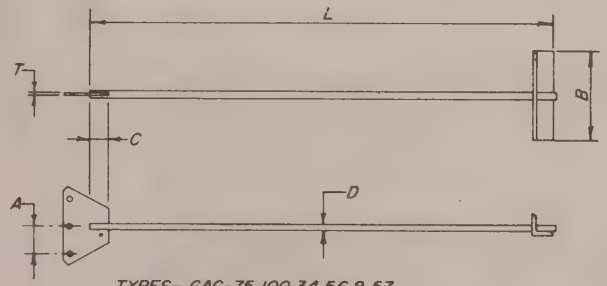
FILE NO.

SCALE	MATERIAL	FINISH	WT
NONE			

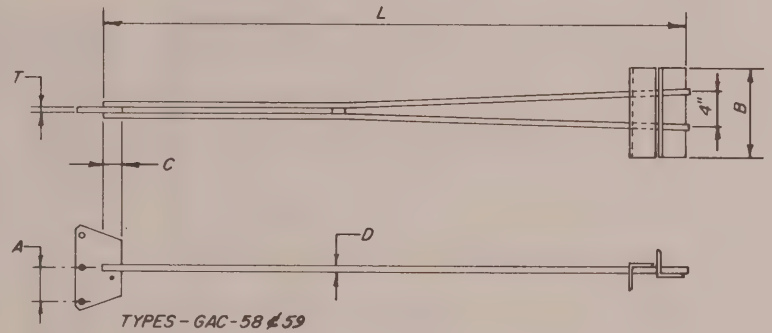
DWN BY	DATE	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
GLS	4/4/73	
CHK'D BY	DATE	TOLERANCES: DEC ± FRAC ± ANGLES ±
	4-4-73	
APP'D ENGRG	DATE	DWG. NO. C-620643 R-10
	4-4-73	
APP'D	DATE	
	4-6-73	



TYPES-GAR-25 & GAC-25



TYPES- GAC-75,100,34,56 & 57



TYPES - GAC-58 & 59

ANCHOR ROD DETAILS

ANCHOR ROD DATA

PART NUMBER	EQUALIZER PLATE TYPE	DIMENSIONS IN INCHES						WEIGHT-LBS.	LOAD CAPACITY-LBS.
		L	A	B	C	D	T		
GAR-25	EYE	64	3/4	4	1 1/2	3/8	—	8	5,500
GAC-25-3	EE	64	2	4	1 1/2	5/8	3/16	12	5,500
GAC-25-5	EE	64	2	4	1 1/2	5/8	3/16	13	5,500
GAC-75-1	EJ	120	1 1/16	12	3	3/4	1/2	25	13,250
GAC-75-3	EJ	120	2 1/2	12	3	3/4	1/2	30	13,250
GAC-75-5	EJ	120	2 1/2	12	3	3/4	1/2	35	13,250
GAC-100-1	EJ	120	15/16	12	4	1 1/8	3/4	55	23,550
GAC-100-3	EJ	120	3	12	4	1 1/8	3/4	65	23,550
GAC-100-5	EJ	120	3	12	4	1 1/8	3/4	75	23,550
GAC-34-33	EJ	84	2	12	2 1/2	3/4	3/8	20	13,250
GAC-56-33	EJ	120	2 1/2	12	3	1 1/4	1/2	60	36,800
GAC-57-33	EJ	168	3	12	4	1 7/16	3/4	115	48,600
GAC-58-33	EJ	192	4	12	6	1 1/4	1	200	73,600
GAC-59-33	EJ	240	4	18	6	1 7/16	1	300	97,300
GAC-34-55	EJ	84	2	12	2 1/2	3/4	3/8	25	13,250
GAC-56-55	EJ	120	2 1/2	12	3	1 1/4	1/2	65	36,800
GAC-57-55	EJ	168	3	12	4	1 7/16	3/4	125	48,600
GAC-58-55	EJ	192	4	12	6	1 1/4	1	220	73,600
GAC-59-55	EJ	240	4	12	6	1 7/16	1	310	97,300

SEE NOTE 6

SEE NOTE 7

8) SEE DRAWING NO. C-730323 FOR ANCHOR ROD FAB. DETAILS.
7) USE EQUALIZER PLATES EP-57- WITH 1 1/16" SLOT- FOR GAC-100 SERIES ANCHORS.
6) USE EQUALIZER PLATES EP-56 - WITH 13/16" SLOT- FOR GAC-75 SERIES ANCHORS.
5) TYPE - EJ EQUALIZER PLATES ARE USED WITH EYE & JAW TURNBUCKLES.
4) TYPE - EE EQUALIZER PLATES ARE SUPPLIED IN PAIRS FOR EYE & EYE TURNBUCKLES.
3) PART NO. SUFFIXES - 1, 3, 5, 33 & 55 DENOTES - 1, 3 OR 5 HOLES IN PLATES.
2) TYPE GAC-25 RODS ARE SUPPLIED WITH TYPE 2534-EE EQUALIZER PLATES.
1) SEE DRAWING NO. C-660416-B₂ FOR EQUALIZER PLATE DETAILS.

NO	DESCRIPTION	DATE	BY
R1	REVISED #57 ROD D DIM. & CAPACITY	8-11-77	TS
D	DELETE #60 ROD, REVISE CAP. #25 ROD	1-15-75	[illegible]

REVISIONS

ROHN® MANUFACTURING
DIVISION OF MARMON GROUP

TITLE
ANCHOR ROD SCHEDULE

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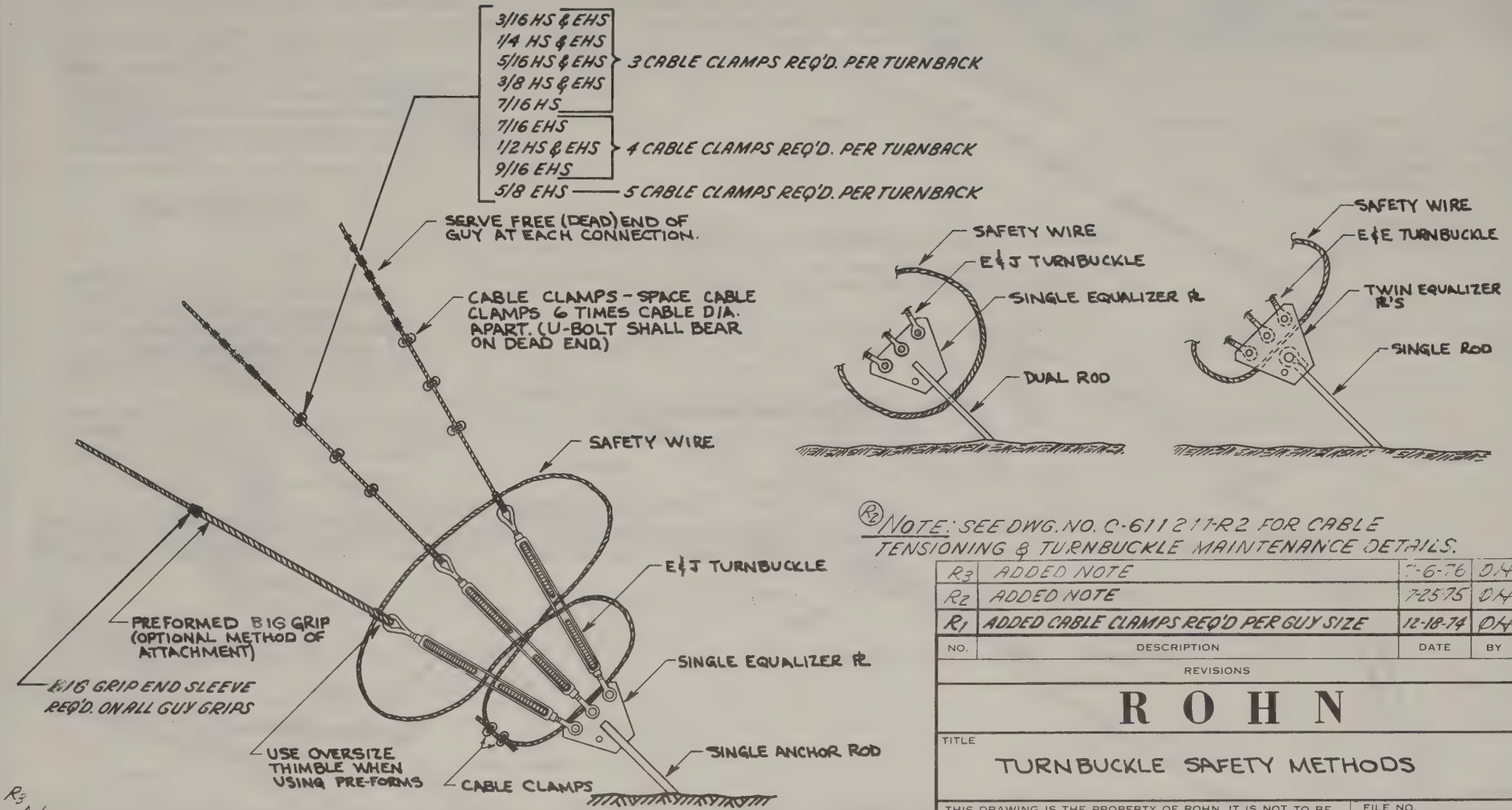
FILE NO.

SCALE NONE	MATERIAL	FINISH	WT
DWN BY DM	DATE 3-22-73	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES	
CK'D BY Ram.	DATE 3-26-73	TOLERANCES DEL : FRAC : ANGLES :	DWG NO C-660415 R1
APP'D BY CW	DATE 3-27-73		
APP'D BY YR	DATE 3-28-73		

CITY BLUE PRINT 1000H 2-73 48181-

PRINTED IN U.S.


3/16 HS & EHS
1/4 HS & EHS
5/16 HS & EHS
3/8 HS & EHS
7/16 HS
3 CABLE CLAMPS REQ'D. PER TURNBACK
7/16 EHS
1/2 HS & EHS
9/16 EHS
4 CABLE CLAMPS REQ'D. PER TURNBACK
5/8 EHS
5 CABLE CLAMPS REQ'D. PER TURNBACK
SERVE FREE (DEAD) END OF GUY AT EACH CONNECTION.
CABLE CLAMPS - SPACE CABLE CLAMPS 6 TIMES CABLE DIA. APART. (U-BOLT SHALL BEAR ON DEAD END)
SAFETY WIRE
E & J TURNBUCKLE
PREFORMED BIG GRIP (OPTIONAL METHOD OF ATTACHMENT)
5/16 GRIP END SLEEVE REQ'D. ON ALL GUY GRIPS
SINGLE EQUALIZER PL
USE OVERSIZE THIMBLE WHEN USING PRE-FORMS
SINGLE ANCHOR ROD
CABLE CLAMPS
SAFETY WIRE
E & J TURNBUCKLE
SINGLE EQUALIZER PL
DUAL ROD
SAFETY WIRE
E & E TURNBUCKLE
TWIN EQUALIZER PL'S
SINGLE ROD

(R2) NOTE: SEE DWG. NO. C-611211-R2 FOR CABLE TENSIONING & TURNBUCKLE MAINTENANCE DETAILS.

R3 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

NO.	DESCRIPTION	DATE	BY
R3	ADDED NOTE	5-6-76	DH
R2	ADDED NOTE	7-25-75	DH
R1	ADDED CABLE CLAMPS REQ'D PER GUY SIZE	12-18-74	DH

REVISIONS

ROHN

TITLE

TURNBUCKLE SAFETY METHODS

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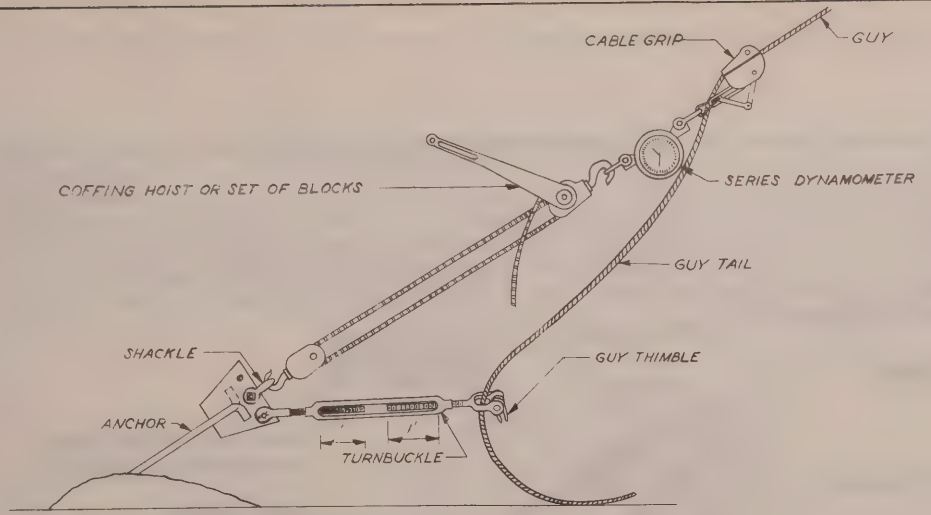
FILE NO.

SCALE	MATERIAL	FINISH	WT
NONE			

DWN BY: A. JOHNSON	DATE: 3-16-68	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE GIVEN IN INCHES
CK'D BY: DH	DATE: 4-4-68	TOLERANCES: DEC ±, FRAC ±, ANGLES ±
APP'D: GR	DATE	DWG. NO. B-680324 R3

C-611211



STEP 1

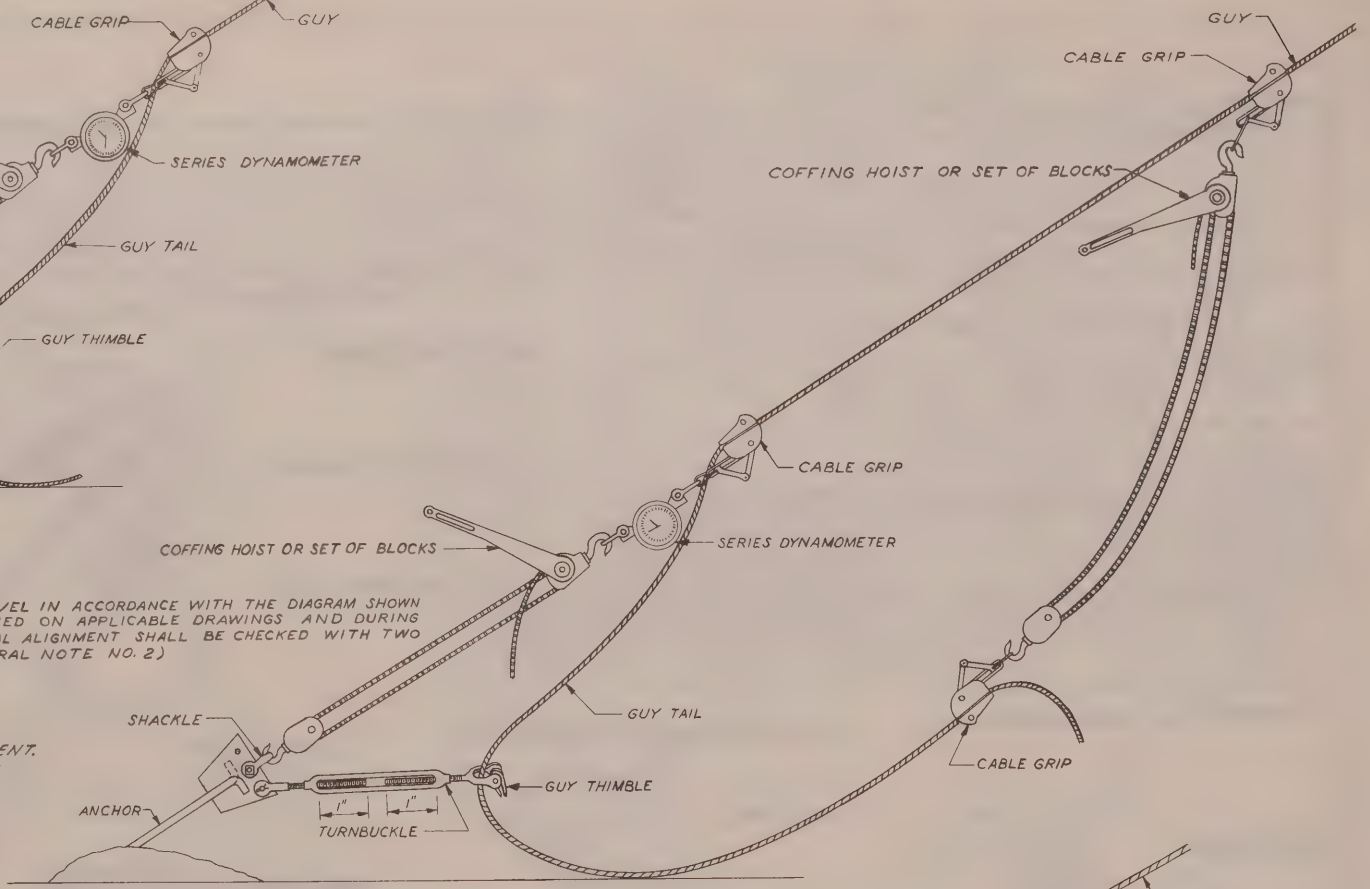
TENSION EACH OF THE THREE GUYS AT EACH GUYING LEVEL IN ACCORDANCE WITH THE DIAGRAM SHOWN ABOVE BY FIRST APPLYING THE INITIAL TENSION AS SPECIFIED ON APPLICABLE DRAWINGS AND DURING THE APPLICATION OF TENSIONING THE TOWERS VERTICAL ALIGNMENT SHALL BE CHECKED WITH TWO SURVEY TRANSITS ESTABLISHED 90° APART. (SEE GENERAL NOTE NO. 2)

TURNBUCKLE MAINTENANCE NOTES

1. GREASE ALL END FITTINGS PRIOR TO USE, USING NO. 16 MATCHLESS GREASE STICKS, OR EQUIVALENT.
2. TURNBUCKLE SIZES 1/4" THRU 5/8" TO BE TURNED BY HAND ONLY.
3. FOR SIZES 3/4" & LARGER, ASSEMBLY CAN BE ACCOMPLISHED USING A MAXIMUM 12" LEVER ARM (LARGE SCREWDRIVER, CRESCENT WRENCH, ETC.), USING MODERATE FORCE - NO MORE THAN 40 FOOT-POUNDS SHOULD BE APPLIED.
4. TURNBUCKLES TO BE ADJUSTED ONLY UNDER NO LOAD CONDITIONS.

GENERAL NOTES

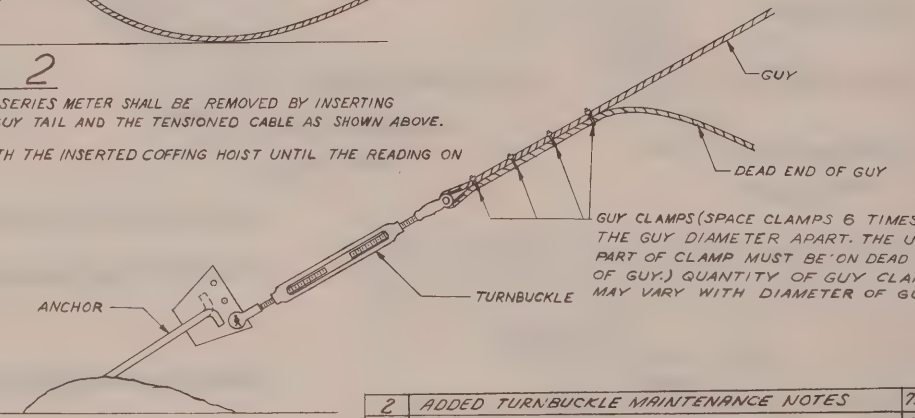
1. REPEAT STEPS 1, 2, & 3 AT EACH GUYING LEVEL.
2. AT EACH GUYING LEVEL, ONLY ONE GUY REQUIRES A SERIES DYNAMOMETER PROVIDING THAT STEPS ARE TAKEN TO CONSTANTLY CHECK AGAINST ROTATIONAL MOVEMENT DURING TENSIONING. ALL GUYS SHALL BE TENSIONED SIMULTANEOUSLY AND EQUALLY.
3. THE TOWER SHALL REMAIN VERTICAL, WITHOUT TWIST, DURING THE ENTIRE ERECTION AND TENSIONING OPERATION.
4. FINALLY, AFTER COMPLETE TOWER IS ERECTED, CHECK THE TOWER FOR PLUMBNESS AND TWIST WITH TWO TRANSITS PLACED 90° APART. USE TURNBUCKLES TO MAKE ANY ADJUSTMENTS NECESSARY.



STEP 2

A. AFTER STEP "1" HAS BEEN COMPLETED, THE SERIES METER SHALL BE REMOVED BY INSERTING ANOTHER COFFING HOIST BETWEEN THE GUY TAIL AND THE TENSIONED CABLE AS SHOWN ABOVE.

B. NEXT, APPLY TENSION ON THE GUY TAIL WITH THE INSERTED COFFING HOIST UNTIL THE READING ON THE SERIES METER BEGINS TO FALL OFF.


GUY
DEAD END OF GUY
GUY CLAMPS (SPACE CLAMPS 6 TIMES THE GUY DIAMETER APART. THE U-BOLT PART OF CLAMP MUST BE ON DEAD END OF GUY.) QUANTITY OF GUY CLAMPS MAY VARY WITH DIAMETER OF GUY.
ANCHOR
TURNBUCKLE

STEP 3

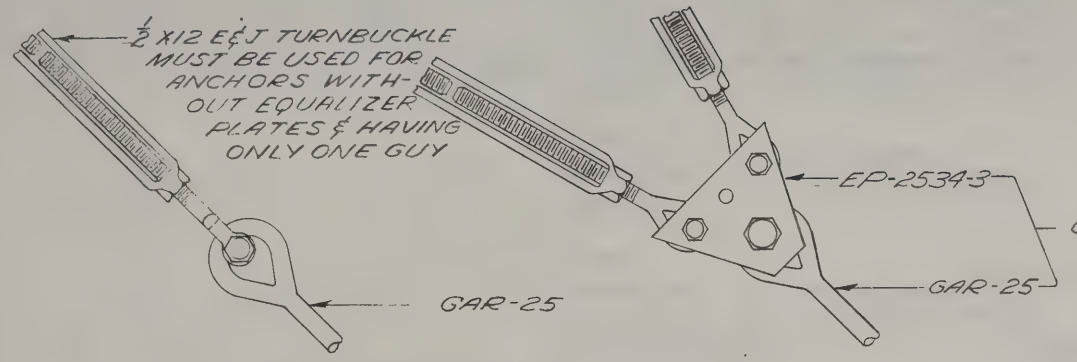
A. AFTER ITEM "B" IN STEP "2" HAS BEEN COMPLETED, CLAMP GUY TAIL WITH GUY CLAMPS.

B. SAFETY WIRE THE TURNBUCKLE. (SEE DRWG. NO. B-680324

C. DEAD END OF GUY SHOULD BE LEFT 2' LONG UNTIL FINAL CHECK FOR PLUMBNESS AND TWIST HAS BEEN MADE.

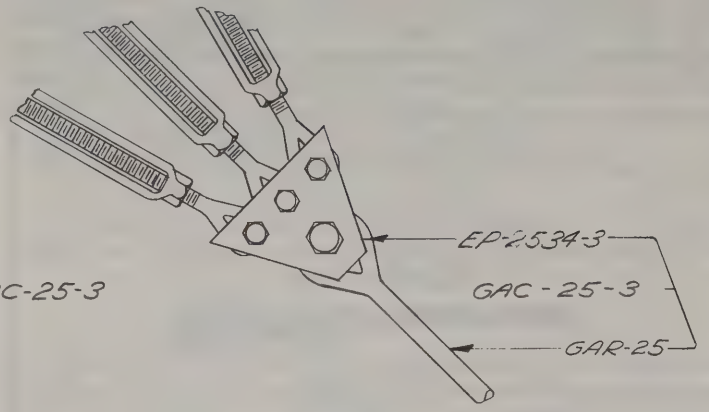
NO.	DESCRIPTION	DATE	BY
2	ADDED TURNBUCKLE MAINTENANCE NOTES	7/25/75	CH
1	CHANGED REFERENCE DWG. NO.	8/27/69	GLS

DRAWN L. HOFFMAN	CUSTOMER	TITLE
CHECKED DAR		DETAILS FOR CABLE TENSIONING STANDARD GUYING
APPROVED DAR		DRAWING NO.
DATE DEC. 11, 1961	ROHN MFG. PEORIA, ILLINOIS	C-611211-R2
SCALE NONE		



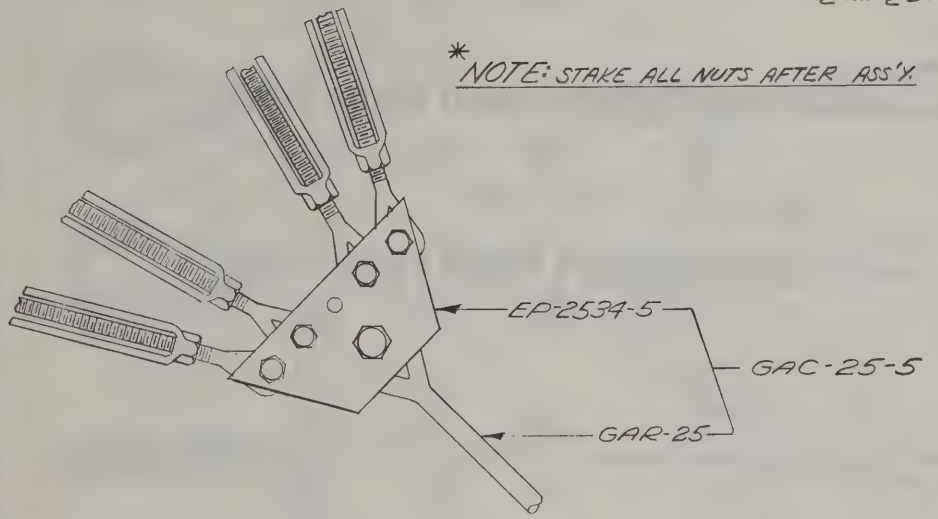
NO EQUALIZER PLATE REQUIRED FOR ONE GUY

TWO WIRE ATTACHMENT

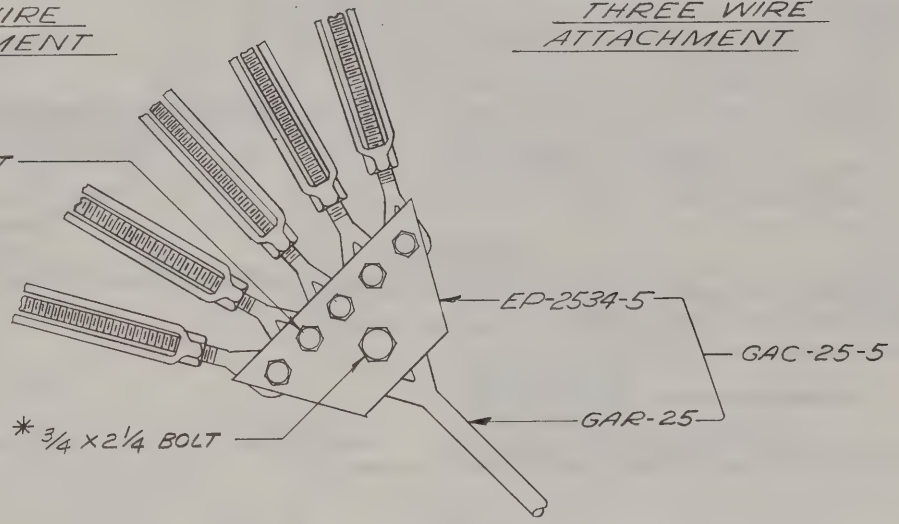


THREE WIRE ATTACHMENT

*NOTE: STAKE ALL NUTS AFTER ASS'Y.



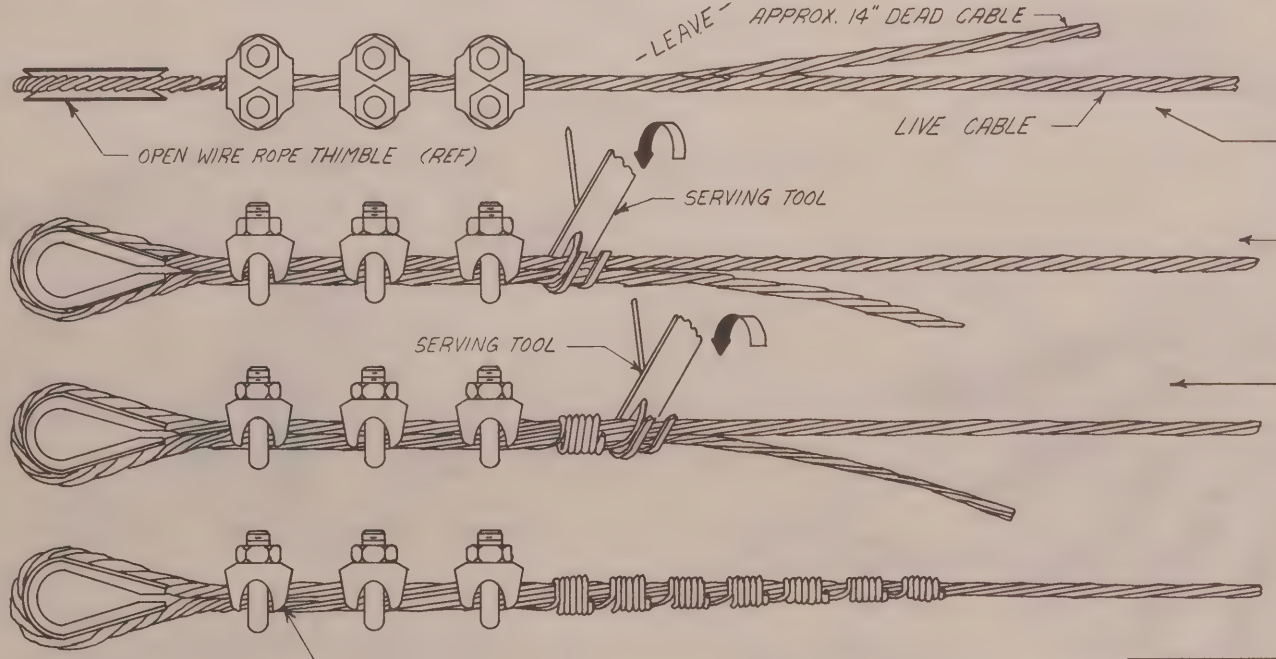
FOUR WIRE ATTACHMENT



FIVE WIRE ATTACHMENT

R2 ADD BOLT SIZES 9-14-76 WPL
R1 - 7-28-64 - O.H.

DRAWN O.HASCHKE		TITLE: ANCHOR ATTACHMENT GAR-25 GAC-25-3 GAC-25-5
CHECKED R.A.K.		
APPROVED c/k		
DATE 6-6-64	ROHN PEORIA, ILLINOIS	DRAWING NO. B-640525-R2
SCALE NONE		



INSTRUCTIONS

1) SPACE CABLE CLAMPS 6X CABLE DIA. APART. (U-BOLT SHALL BEAR ON DEAD END)

2) UNWIND ONE STRAND FROM DEAD CABLE, APPLY SERVING TOOL, AND WRAP 6 TIMES AROUND.

3) UNWIND SECOND STRAND FROM DEAD CABLE, APPLY SERVING TOOL, AND WRAP 6 TIMES AROUND. REPEAT WITH EACH REMAINING STRAND.

4) COMPLETED CONNECTION CLIPPED AND SERVED EACH STRAND WOUND AROUND GUY CABLE SIX TIMES.

5) RETIGHTEN CABLE CLAMPS AFTER INITIAL TENSION HAS BEEN APPLIED.

3/16 HS & EHS 1/4 HS & EHS 5/16 HS & EHS 3/8 HS & EHS 7/16 HS	3 CABLE CLAMPS REQ'D PER TURNBACK
7/16 EHS 1/2 HS & EHS 9/16 EHS	4 CABLE CLAMPS REQ'D PER TURNBACK
5/8 EHS	5 CABLE CLAMPS REQ'D PER TURNBACK

R2 NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMER'S OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORTS FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

NO.	DESCRIPTION	DATE	BY
R2	ADDED NOTE	7-6-76	OH
R1	REDRAWN	1-3-75	WR

REVISIONS

ROHN® MANUFACTURING
DIVISION OF UNARCO

TITLE: CLIPPED AND SERVED GUY CABLE CONNECTION INSTRUCTIONS

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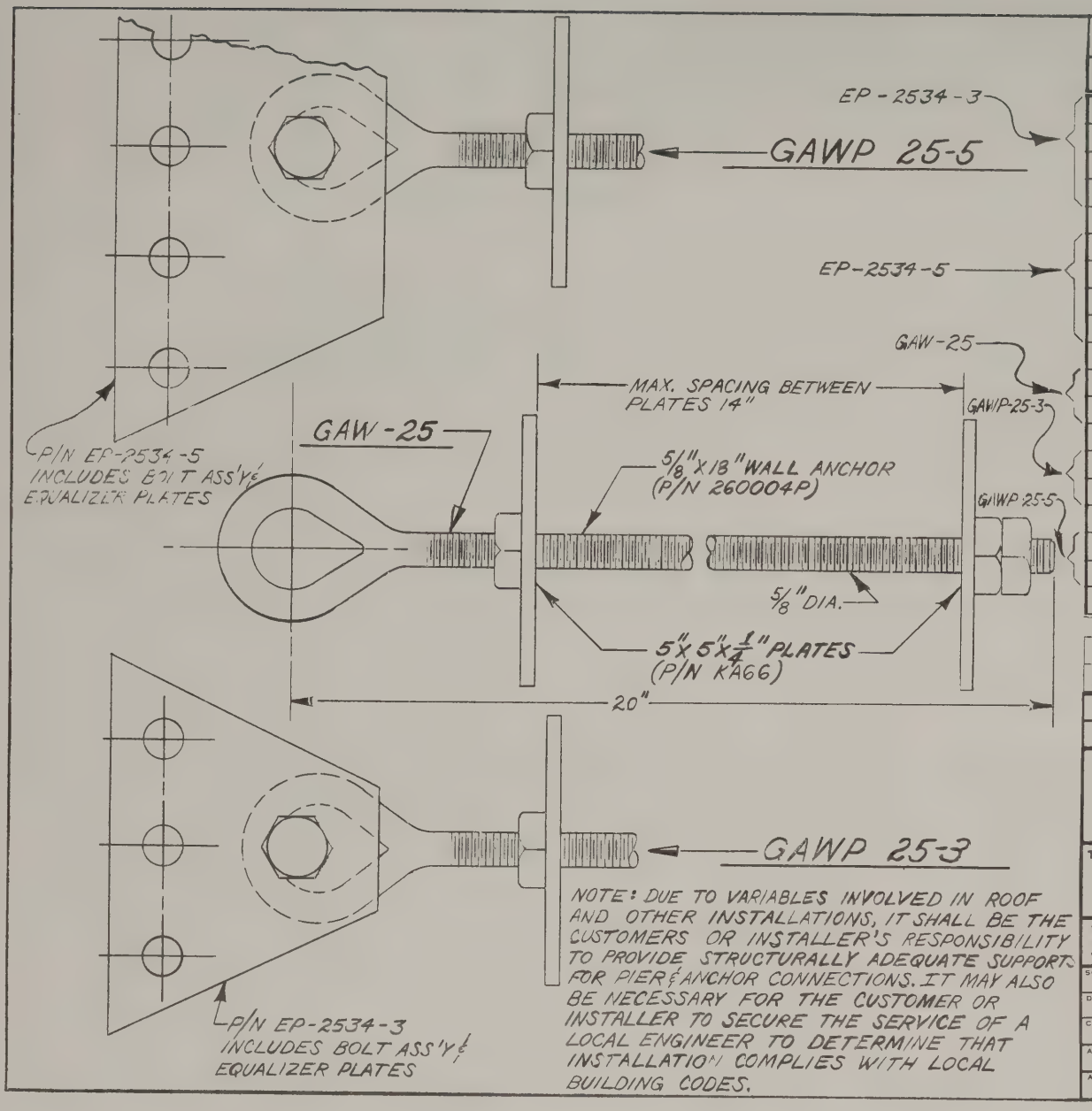
FILE NO.

SCALE: NONE	MATERIAL	FINISH	WT.
DWN. BY: WR	DATE: 1-3-75	UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE GIVEN IN INCHES.	
CK'D. BY: OH	DATE: 1-7-75		
APP'D. ENGRG.: CW	DATE: 1-7-75	TOLERANCES: DEC. ± FRAC. ± ANGLES ±	DWG. NO. B-690712 R2
APP'D. SALES: BR	DATE: 1-7-75		

GAF 880-250 2-72 48191

PRINTED IN U.S.A.



NOTE: DUE TO VARIABLES INVOLVED IN ROOF AND OTHER INSTALLATIONS, IT SHALL BE THE CUSTOMERS OR INSTALLER'S RESPONSIBILITY TO PROVIDE STRUCTURALLY ADEQUATE SUPPORT FOR PIER & ANCHOR CONNECTIONS. IT MAY ALSO BE NECESSARY FOR THE CUSTOMER OR INSTALLER TO SECURE THE SERVICE OF A LOCAL ENGINEER TO DETERMINE THAT INSTALLATION COMPLIES WITH LOCAL BUILDING CODES.

BILL OF MATERIAL

QUAN.	PART NO.	DESCRIPTION	DWG. NO.
2	EP25-3	3-HOLE EQUALIZER PL'S.	C-6604 6 R_1
1	210043GA	3/4"X2 1/4 BOLT ASS'Y	
3	210018GA	1/2"X1 1/2" BOLT & NUT ASS'Y	
1	720004	PLASTIC BAG 6"X9"	
2	EP25-5	5-HOLE EQUALIZER PL'S.	C-660416 R_1
1	210043GA	3/4"X2 1/2" BOLT ASS'Y.	
5	210018GA	1/2"X1 1/2" " " " "	
1	720006	PLASTIC BAG 9"X13"	
1	260004P	5/8"X18" WALL ANCHOR	
2	KA66	5"X5"X1/4" RETAINER PL'S.	
1	EP-2534-3	EQUALIZER PLATE KIT	
1	GAW-25	WALL ANCHOR ASS'Y	
1	EP-2534-5	EQUALIZER PLATE KIT	
1	GAW-25	WALL ANCHOR ASS'Y	

NO.	DESCRIPTION	DATE	BY
R_2	ADDED BILLS OF MATERIAL	8-2-[illegible]	[illegible]
R_1	ADDED NOTE	7-6-76	D.H.

REVISIONS

ROHN® MANUFACTURING
DIVISION OF UNARCO

TITLE

WALL & ROOF ANCHOR

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FILE NO.

SCALE	MATERIAL	FINISH	WT.
~			

DWN. BY J.H.D.	DATE 6-21-77	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN INCHES.
CK'D BY D.L.	DATE	TOLERANCES: DEC ±, FRAC ±, ANGLES ±
APP'D ENGRG	DATE 8-5-71	DWG. NO. B-710804 R_2
APP'D SALES	DATE 8-6-71	

SHEET D-1266
(New Sheet)

July 1, 1977

CROSS REFERENCE SHEET

SSV TOWER

OLD LEG NO.	NEW LEG NO.	OLD LEG NO.	NEW LEG NO.
4N	VL345	9NHST	VL369
4NST	VL337	9NHST w/step	VL369S
4NC	VL338	10N	VL359
4NB	VL339	10N w/step	VL359S
4NA	VL340	10NST	VL370
5N	VL346	10NST w/step	VL370S
5NST	VL341	10NH	VL351
5NC	VL342	10NH w/step	VL351S
5NB	VL343	10NHST	VL371
5NA	VL344	10NHST w/step	VL371S
6N	VL347	11N	VL352
6N w/step	VL347S	11N w/step	VL352S
6NST	VL365	11NST	VL372
6NST w/step	VL365S	11NST w/step	VL372S
7N	VL348	12N	VL360
7N w/step	VL348S	12NST	VL373
7NST	VL366	12NH	VL353
7NST w/step	VL366S	12NHST	VL374
8N	VL349	13N	VL361
8N w/step	VL349S	13NH	VL354
8NST	VL367	14N	VL362
8NST w/step	VL367S	14NH	VL355
9N	VL358	15N	VL363
9N w/step	VL358S	15NH	VL356
9NST	VL368	16N	VL363
9NST w/step	VL368S	16NH	VL356
9NH	VL350		
9NH w/step	VL350S		

CROSS REFERENCE SHEET

#80 TOWER

NEW SECTION PART NO.	OLD SECTION PART NO.	NEW LEG NO.	OLD LEG NO.	WT.
83P	83P	KL56	83P	420
83PS	83P w/steps	KL56	83P	425
		KL56S		
83PA	83P - 5' lg.	KL98	83P	165
83PAS	83P - 5' lg. w/steps	KL98	83P	167
		KL98S		
83PB	83P - 10' lg.	KL126	83P	249
83PBS	83P - 10' lg. w/steps	KL126	83P	252
		KL126S		
83PC	83P - 15' lg.	KL154	83P	336
83PCS	83P - 15' lg. w/steps	KL154	83P	341
		KL154S		
83PH	83PH	KL57	83PH	510
83PHS	83PH w/steps	KL57	83PH	515
		KL57S		
83PHA	83PH - 5' lg.	KL99	83PH	189
83PHAS	83PH - 5' lg. w/steps	KL99	83PH	191
		KL99S		
83PHB	83PH - 10' lg.	KL127	83PH	294
83PHBS	83PH - 10' lg. w/steps	KL127	83PH	297
		KL127S		
83PHC	83PH - 15' lg.	KL155	83PH	402
83PHCS	83PH - 15' lg. w/steps	KL155	83PH	407
		KL155S		
84	84	KL60	84	570
84S	84 w/steps	KL60	84	575
		KL60S		
84A	84 - 5' lg.	KL102	84	201
84AS	84 - 5' lg. w/steps	KL102	84	203
		KL102S		
84B	84 - 10' lg.	KL130	84	318
84BS	84 - 10' lg. w/steps	KL130	84	322
		KL130S		
84C	84 - 15' lg.	KL158	84	438
84CS	84 - 15' lg. w/steps	KL158	84	443
		KL158S		
84H	84H	KL61	84H	680
84HS	84H w/steps	KL61	84H	685
		KL61S		
84HA	84H - 5' lg.	KL103	84H	228
84HAS	84H - 5' lg. w/steps	KL103	84H	230
		KL103S		
84HB	84H - 10' lg.	KL131	84H	381
84HBS	84H - 10' lg. w/steps	KL131	84H	384
		KL131S		
84HC	84H - 15' lg.	KL159	84H	528
84HCS	84H - 15' lg. w/steps	KL159	84H	533
		KL159S		
85	85	KL64	85	650
85S	85 w/steps	KL64	85	655
		KL64S		
85A	85 - 5' lg.	KL106	85	255
85AS	85 - 5' lg. w/steps	KL106	85	257
		KL106S		
85B	85 - 10' lg.	KL134	85	402
85BS	85 - 10' lg. w/steps	KL134	85	405
		KL134S		
85C	85 - 15' lg.	KL162	85	546
85CS	85 - 15' lg. w/steps	KL162	85	551
		KL162S		
85H	85H	KL65	85H	810
85HS	85H w/steps	KL65	85H	815
		KL65S		
85HA	85H - 5' lg.	KL107	85H	303
85HAS	85H - 5' lg. w/steps	KL107	85H	305
		KL107S		
85HB	85H - 10' lg.	KL135	85H	489
85HBS	85H - 10' lg. w/steps	KL135	85H	492
		KL135S		
85HC	85H - 15' lg.	KL163	85H	675
85HCS	85H - 15' lg. w/steps	KL163	85H	680
		KL163S		
845H	845H	KL68	845H	695
845HS	845H w/steps	KL68	845H	700
		KL68S		

NEW SECTION PART NO.	OLD SECTION PART NO.	NEW LEG NO.	OLD LEG NO.	WT.
83PX	83PX	KL58	83PX	560
83PXS	83PX w/steps	KL58	83PX	565
		KL58S		
83PXA	83PX - 5' lg.	KL100	83PX	192
83PXAS	83PX - 5' lg. w/steps	KL100	83PX	194
		KL100S		
83PXB	83PX - 10' lg.	KL128	83PX	309
83PXBS	83PX - 10' lg. w/steps	KL128	83PX	312
		KL128S		
83PXC	83PX - 15' lg.	KL156	83PX	426
83PXCS	83PX - 15' lg. w/steps	KL156	83PX	431
		KL156S		
83PHX	83PHX	KL59	83PHX	650
83PHXS	83PHX w/steps	KL59	83PHX	655
		KL59S		
83PHXA	83PHX - 5' lg.	KL101	83PHX	216
83PHXAS	83PHX - 5' lg. w/steps	KL101	83PHX	218
		KL101S		
83PHXB	83PHX - 10' lg.	KL129	83PHX	354
83PHXBS	83PHX - 10' lg. w/steps	KL129	83PHX	357
		KL129S		
83PHXC	83PHX - 15' lg.	KL157	83PHX	492
83PHXCS	83PHX - 15' lg. w/steps	KL157	83PHX	497
		KL157S		
84X	84X	KL62	84X	700
84XS	84X w/steps	KL62	84X	705
		KL62S		
84XA	84X - 5' lg.	KL104	84X	228
84XAS	84X - 5' lg. w/steps	KL104	84X	230
		KL104S		
84XB	84X - 10' lg.	KL132	84X	375
84XBS	84X - 10' lg. w/steps	KL132	84X	378
		KL132S		
84XC	84X - 15' lg.	KL160	84X	525
84XCS	84X - 15' lg. w/steps	KL160	84X	530
		KL160S		
84HX	84HX	KL63	84HX	800
84HXS	84HX w/steps	KL63	84HX	805
		KL63S		
84HXA	84HX - 5' lg.	KL105	84HX	261
84HXAS	84HX - 5' lg. w/steps	KL105	84HX	263
		KL105S		
84HXB	84HX - 10' lg.	KL133	84HX	438
84HXBS	84HX - 10' lg. w/steps	KL133	84HX	441
		KL133S		
84HXC	84HX - 15' lg.	KL161	84HX	615
84HXCS	84HX - 15' lg. w/steps	KL161	84HX	620
		KL161S		
85X	85X	KL66	85X	790
85XS	85X w/steps	KL66	85X	795
		KL66S		
85XA	85X - 5' lg.	KL108	85X	282
85XAS	85X - 5' lg. w/steps	KL108	85X	284
		KL108S		
85XB	85X - 10' lg.	KL136	85X	459
85XBS	85X - 10' lg. w/steps	KL136	85X	462
		KL136S		
85XC	85X - 15' lg.	KL164	85X	633
85XCS	85X - 15' lg. w/steps	KL164	85X	638
		KL164S		
85HX	85HX	KL67	85HX	950
85HXS	85HX w/steps	KL67	85HX	955
		KL67S		
85HXA	85HX - 5' lg.	KL109	85HX	330
85HXAS	85HX - 5' lg. w/steps	KL109	85HX	332
		KL109S		
85HXB	85HX - 10' lg.	KL137	85HX	546
85HXBS	85HX - 10' lg. w/steps	KL137	85HX	549
		KL137S		
85HXC	85HX - 15' lg.	KL165	85HX	762
85HXCS	85HX - 15' lg. w/steps	KL165	85HX	767
		KL165S		
845HX	845HX	KL69	845HX	805
845HXS	845HX w/steps	KL69	845HX	810
		KL69S		

W A R N I N G

Your tower may or may not include step bolts for construction purposes. Step bolts are supplied on self-supporting towers as a convenience during construction.

If your tower has step bolts, the spacing at the section joints may not be consistant with the spacing throughout the tower. If this condition presents any hazard, please do not use these step bolts. If you or your customer think this possible unequal spacing will present safety problems to any personnel, do not install any step bolts. For proper safety Unarco-Rohn recommends a ladder and safety climbing device on large towers where inexperienced personnel climb the tower.

Unarco-Rohn will not be responsible for the use of step bolts. If you wish to use step bolts as supplied, this responsibility will be totally yours or your customer's.

Do not install tower near power lines. All towers should be installed out of falling distance of power lines since every electrical and telephone wire should be considered dangerous.

Anti-climb sections are recommended for all towers to prevent unauthorized persons from climbing tower.

All towers or masts should be installed by experienced and trained personnel.

All types of antenna installations should be thoroughly inspected by qualified personnel at least twice a year to insure safety and proper performance.

Unarco-Rohn
Division of Unarco Industries, Inc.

Form No. 74539-R1

April 25, 1975

N O T I C E

Due to the present day Occupational Safety and Health Act regulations, towers and parts are available incorporating features which will permit a safe product. However, the following is our position with regard to OSHA.

It is Rohn's intention to comply with the Williams-Steiger Occupational Safety and Health Act of 1970. It is a policy of Rohn to design and make towers and related equipment that are safe to use without hazards to people and/or property. We cannot, however, agree to a "blanket" certification that we are in total compliance with this Act because there are provisions in it whose meaning and application are unclear.

Therefore, we ask that you list your specific requirements with which you wish us to comply. These requirements may or may not affect the price of the towers and equipment under consideration for purchase.

We appreciate the opportunity afforded and would be happy to answer any additional questions you may have relative to our proposal.

Unarco-Rohn
Peoria, Illinois

FORM NO. 75658

UNARCO-ROHN TOWER DESIGN INFORMATION

1. Rohn communication tower designs conform to E.I.A. RS-222-C. Tower design may or may not conform to local, state or federal requirements.
2. Tower member design does not include stresses due to erection since erection equipment and conditions are unknown. Unarco-Rohn assumes competent and qualified personnel will erect the tower.
3. For determining antenna torques and member sizes for microwave towers, Unarco-Rohn requires tower layout and dish azimuths (site plan). For bidding purposes, if this information is not supplied, Unarco-Rohn will design the tower members based on assumed values of antenna torque. When dish azimuths are specified without a tower orientation, the following tower orientation will be assumed:
    (a) For triangular guyed or self-supporting towers, Unarco-Rohn will assume one leg or anchor pointing north and one face parallel to an east-west line.
    (b) For square towers, Unarco-Rohn assumes faces parallel to east-west and north-south lines.

    Tower member sizes may change if final tower layout and dish azimuths (site plan) indicate antenna torques different from those assumed. Upon receipt of final tower layout and dish azimuths (site plan), Unarco-Rohn will not perform re-engineering of the tower or change material unless specifically requested and paid for by the customer.

NOTICE

ROHN makes available many items and types of towers which may or may not be required for your particular installation. Based on local, state, or federal laws and building codes for your area, it may be necessary that your particular tower have special items or be given special consideration.

ROHN makes available, either as standard or specials, many items and special care should be taken as to whether any or all of these items are required for your tower. Please be specific and advise us of your exact needs. ROHN cannot be responsible for any omission at anytime.

Some items available in various types and sizes are safety climbing devices, ladders, safety cages, anti-climbing devices, work platforms, rest platforms, F.A.A. painting or lighting, grounding, and fencing. Special engineering service and special packaging are also available. If there are special requirements for your tower, be sure to include them in your request for quotation and on your order.

COMMENTARY OF E.I.A. RS-222-C INTERPRETATION

Section 6.1.1 - Foundation and Anchor Tolerances

Unarco-Rohn does not include tolerances on foundation and anchor drawings because certain field conditions may require a deviation from specified tolerances. There are situations where tolerances may require a higher or lower value than those listed on the drawing. A certain amount of judgment must be left with the personnel supervising the construction. All construction is expected to be performed in a good workmanlike manner utilizing the most current and available methods and equipment.

Some general guidelines for allowable variances of the dimensions shown on the drawings are listed below which, in most cases, are satisfactory.

1. Concrete dimensions - plus or minus 1"
2. Depth of foundation - plus 3" or minus 0"
3. Reinforcing steel placement - plus or minus 1/4"
4. Anchor bolt circle diameter - plus or minus 1/32"
5. Anchor bolt circle orientation - plus or minus .25 degree
6. Face spread dimension (center to center of anchor bolt circle) plus or minus 1/16"
7. Guy radius - 3 per cent of tower height
8. Anchor elevation - 3 per cent of tower height above or below tower base
9. Anchor alignment (perpendicular to guy radius) - plus or minus .1 degree
10. Anchor rod slope - plus or minus 1 degree
11. Guy initial tension - plus or minus 10 per cent of the value specified on the tower assembly drawing.

Commentary of E.I.A. RS-222-C Interpretation Cont'd.

Section 10.2 - Guy Initial Tension

Initial tension value specified on the tower assembly drawings are based on a temperature of 60 degrees Fahrenheit and a wind velocity of less than 10 miles per hour. Corrections for the initial tension values at the various temperatures and guy slopes can be interpolated from the chart below. Tower length changes due to changes in guy stresses and sag stresses have been neglected.

GUY SIZE	TEMPERATURE °F	Guy Level Elevation on Tower / Distance from Tower Base to Guy Anchor — Ratio of					
		.36	.58	.84	1.00	1.19	1.73
1/4EHS	120°	415	445	495	525	545	585
	90°	540	555	580	595	605	625
	60°	665	665	665	665	665	665
	30°	790	775	750	735	725	705
	0°	915	885	835	805	785	745
5/16EHS	120°	690	760	840	880	920	1000
	90°	905	940	980	1000	1020	1060
	60°	1120	1120	1120	1120	1120	1120
	30°	1335	1300	1260	1240	1220	1180
	0°	1550	1480	1400	1360	1320	1240
3/8EHS	120°	980	1050	1160	1210	1270	1380
	90°	1260	1295	1350	1375	1405	1460
	60°	1540	1540	1540	1540	1540	1540
	30°	1820	1785	1730	1705	1675	1620
	0°	2100	2030	1920	1870	1810	1700
7/16EHS	120°	1240	1360	1510	1600	1690	1840
	90°	1660	1720	1795	1840	1885	1960
	60°	2080	2080	2080	2080	2080	2080
	30°	2500	2440	2365	2320	2275	2200
	0°	2920	2800	2650	2560	2470	2320
1/2EHS	120°	1600	1760	1960	2070	2180	2380
	90°	2145	2225	2325	2380	2435	2535
	60°	2690	2690	2690	2690	2690	2690
	30°	3235	3155	3055	3000	2945	2845
	0°	3780	3620	3420	3310	3200	3000
9/16EHS	120°	2100	2310	2570	2700	2840	3100
	90°	2800	2920	3030	3100	3170	3300
	60°	3500	3500	3500	3500	3500	3500
	30°	4200	4100	3970	3900	3830	3700
	0°	4900	4690	4430	4300	4160	3900
5/8EHS	120°	2530	2790	3110	3270	3440	3760
	90°	3390	3520	3670	3760	3840	4000
	60°	4240	4240	4240	4240	4240	4240
	30°	5090	4960	4810	4720	4640	4480
	0°	5950	5690	5370	5210	5040	4720

Commentary of E.I.A. RS-222-C Interpretation Cont'd.

Section 12.3 - Method of Determination (Tower Twist and Sway)

Paragraph 12.3.1 states that the preferred method of determining the tower twist and sway is the analytical method. Analytical methods have been used for many years by the tower industry and have proven to be satisfactory.

Due to the many unknown loading conditions (non-uniform wind loading, unusual topography, severe icing, tower maintenance, etc.) that may exist during the life of a communications tower, the guarantee for allowable twist and sway exists only for the customer's specified wind and ice load on an analytical method. Actual tests and field conditions may indicate results different from the analytical method.

Section 13.2.2 - Climbing Facilities

This section requires a climbing facility designed to support 250 pounds concentrated live load. On towers, such as the #25, #45, #55, J, C, and D, the horizontal member used for climbing may not meet this 250 pound concentrated load criteria if verified by using engineering formulas. However, the steps for these towers have performed satisfactorily and to our knowledge do meet the intent of this section of E.I.A. by providing a safe climbing facility when so used.

Section 13.2.2.2 - Step Bolts

It is Unarco-Rohn's intent to meet the step bolt spacing requirements of this section. This section requires spacing of a minimum of 12 inches and a maximum of 18 inches. Due to large leg members and very thick flange plates on some heavy duty towers, this maximum 18 inch spacing may be exceeded near the flange plates. This spacing may exceed the 18 inch maximum by approximately 1 inch. If the customer feels this excess step bolt spacing will create problems, step bolts should be removed from the tower and an alternate climbing method used such as a ladder. Due to the variable spacing of the step bolts along the height of the tower, Unarco-Rohn recommends the customer install a safety climbing device on each leg that is to be climbed by the customer's trained personnel.

EIA STANDARD

Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

RS-222-C

(Revision of RS-222-B)

SAMPLE

MARCH 1976

Engineering Department

ELECTRONIC INDUSTRIES ASSOCIATION

NOTICE

EIA engineering standards are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such standards shall not in any respect preclude any member or non-member of EIA from manufacturing or selling products not conforming to such standards.

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Published by

ELECTRONIC INDUSTRIES ASSOCIATION

Engineering Department

2001 Eye Street, N.W., Washington, D. C. 20006

SAMPLE

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PRICE: $5.50

The above mentioned Structural Standards for Steel Tower Design are available direct from the Electronic Industries Association. The Standards are also available from Unarco-Rohn, Post Office Box 2000, Peoria, Illinois 61601. The cost is $6.50, postage paid.

Printed in U.S.A.

STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES

(From EIA Standard RS-222-B and Standards Proposal No. 1182, formulated under the cognizance of EIA Subcommittee TR-14.7 on Towers.)

EXPLANATORY

The objective of these standards is to provide minimum criteria for specifying and designing Steel Antenna Towers and Antenna Supporting Structures. These standards are not intended to replace or supersede any applicable codes. These standards shall apply to Steel Antenna Towers and Antenna Supporting Structures for all classes of communications services: AM, CATV, FM, Microwave, TV, VHF, and others.

SAMPLE

SCOPE

This standard describes the requirements for steel antenna towers and antenna supporting structures.

STRUCTURAL STANDARDS CONSIST OF . . .

1. MATERIAL
   - 1.1 Standard
2. LOADING
   - 2.1 Definitions
   - 2.2 Standard
   - 2.3 Method of Determination
3. STRESSES
   - 3.1 Standard
4. MANUFACTURE AND WORKMANSHIP
   - 4.1 Standard
5. FACTORY FINISH
   - 5.1 Standard
6. PLANS AND MARKING
   - 6.1 Standard
7. FOUNDATIONS AND ANCHORS - CONCRETE OR OTHER MATERIAL
   - 7.1 Definition
   - 7.2 Standard
8. FACTORY OF SAFETY OF GUYS
   - 8.1 Definition
   - 8.2 Standard
9. PRESTRESSING AND PROOF LOADING OF GUYS
   - 9.1 Definition
   - 9.2 Standard
10. GUY TENSION (INITIAL GUY TENSION)
    - 10.1 Definition
    - 10.2 Standard
    - 10.3 Method of Measurement
11. TOWER TWIST, SWAY AND DISPLACEMENT
    - 11.1 Definition
    - 11.2 Standard
    - 11.3 Method of Determination
12. PROTECTIVE GROUNDING
    - 12.1 Definition
    - 12.2 Standard
13. CLIMBING AND WORKING FACILITIES
    - 13.1 Definition
    - 13.2 Standard

SAMPLE

TABLE 1

DESIGN WIND LOADING ZONES FOR STATES AND COUNTIES

(For Continental United States only)

TABLE OF

ALLOWABLE TWIST AND SWAY VALUES

FOR MICROWAVE TOWER - ANTENNA - REFLECTOR SYSTEMS

The above mentioned Structural Standards for Steel Tower Design are available direct from the Electronic Industries Association. The Standards are also available from Unarco-Rohn, Post Office Box 2000, Peoria, Illinois 61601. The cost is $6.50, postage paid.

Form No. 76816

ROHN PATIO "Twin Set"

Part No. PTS 54B

Unarco-Rohn

Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

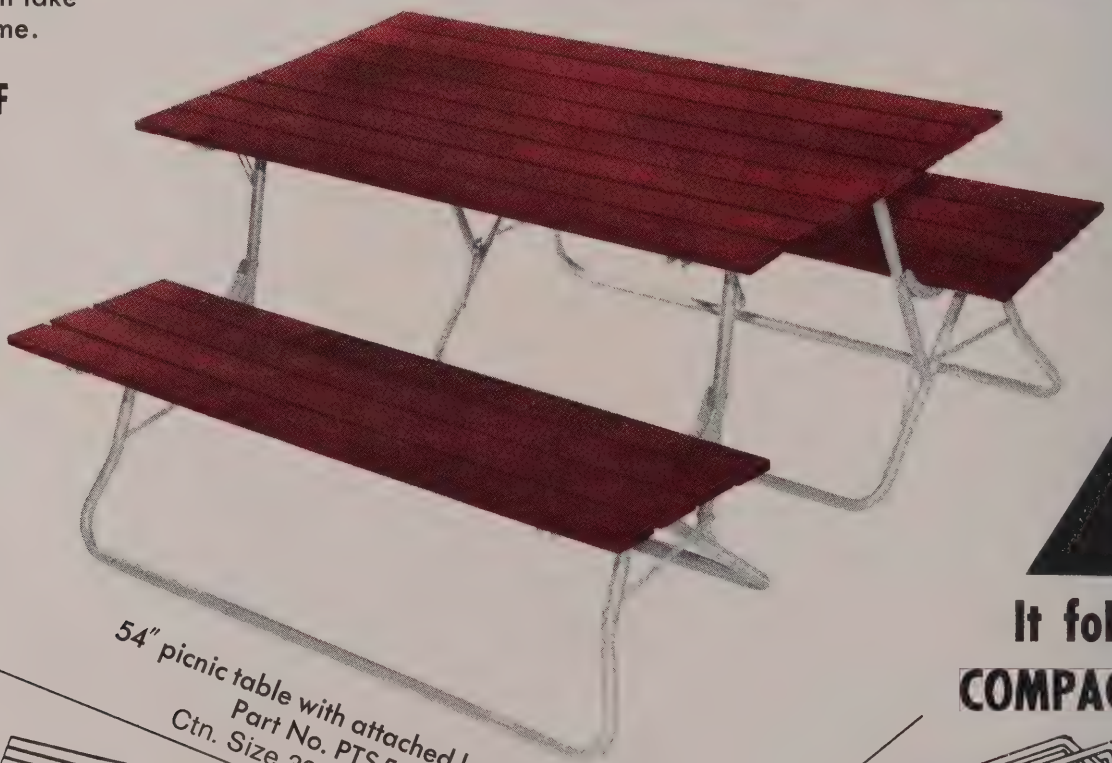
LEISURE PRODUCTS

A truly unique idea!

the ROHN PATIO "Twin Set"

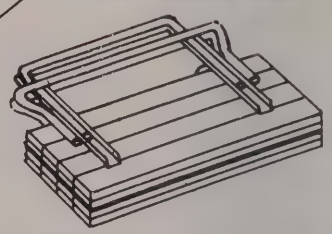
Look at how a revolutionary idea in design gives for great usage of a deluxe picnic table! Here's a functional picnic table, complete in itself with benches that CONVERTS to MULTIPLE uses. It's attractive, durable, can be used inside or out — year-around. It can be transported because it fits into trunk or station wagon easily — so you can take it with you anytime.

HERE'S PROOF that the PATIO "Twin Set" can't be beat!



54" picnic table with attached benches!
Part No. PTS54B
Ctn. Size 32" x 11" x 57"

It folds COMPACTLY!



Take it with you anywhere. Use it always! Or store it when you're not using it!

OR

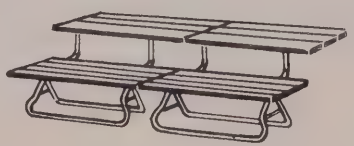
Patio benches with back rests!

OR

two sectional tables with attached benches!

OR

One single abbreviated table with attached benches!



Plus features EVERYONE LIKES!

- Genuine California Redwood weather-resistant top and seats
- Galvanized tubular steel frames and hardware for lifetime service
- Frames have black baked on finish for an attractive appearance.
- 1" x 4" Redwood slats riveted firmly to steel frame
- Steel center braces riveted to seat — no wood screws to loosen
- Comes one set to carton with a total weight of approx. 65 pounds!
- Completely assembled ready to use.

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Division of Unarco Industries, Inc.
P.O. Box 2000, Peoria, Illinois 61656
LEISURE PRODUCTS

Form No. 781008-A

ROHN PATIO FURNITURE

◀ **TWO ROHN SNACK CHAIRS (SC1B) WITH ACCESSORY TABLE (AT2B)**
Accessory Table with casters for easy movability. Snack Chair can be used as a chair or ...

TWO ROHN SNACK CHAIRS (SC1B) ▶
flip top and use as a snack table with attached bench.

◀ **ROHN SWING SET (SS2RB)**

ROHN PATIO FURNITURE BUILT OF TRUE CALIFORNIA REDWOOD AND HIGH-STRENGTH STEEL TUBING.

Snack Chair
Part No. SC1B Ctn. Size 27" x 31" x 6" Approx. Wt. 20#
May be used as a chair or flip the top over and use as a Snack Table. This table is a compact 24" wide, which folds up for convenient storage or transport. Easily fits any car trunk. Completely assembled and ready to use.

Accessory Table
Part No. AT2B Ctn. Size 20" x 26" x 4" Approx. Wt. 14#
Big 15" x 24" top, 19" high Accessory Table which nicely complements the Snack Chair or Patio Twin-Set. Easily disassembled to store or transport.

Swing
Part No. S1RB Ctn. Size 49" x 24" x 6" Approx. Wt. 28#
Swing may be folded for convenient storage and transport. Can be used as a porch swing or attached to the beautiful, white steel stand.

Swing Stand
Part No. SS1B Ctn. Size 67" x 15" x 4" Approx. Wt. 43#

Stand is fabricated from 1¼" steel tubing with a beautiful white baked-on finish. Easily assembled. **When ordering swing and stand together use Part No. SS2RB.**

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LEISURE PRODUCTS

Form No. 781008-B

ROHN PATIO FURNITURE

◀ **TWO ROHN SNACK CHAIRS (SC1B) WITH ACCESSORY TABLE (AT2B)**
Accessory Table with casters for easy movability. Snack Chair can be used as a chair or ...

TWO ROHN SNACK CHAIRS (SC1B) ▶
flip top and use as a snack table with attached bench.

◀ **ROHN SWING SET (SS2RB)**

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LEISURE PRODUCTS

Form No. 781008-B

The Perfect Answer for
FIREPLACE WOOD STORAGE!

ROHN® WOOD RACK!

All fireplace owners have the problem of clean, neat storage. Now comes the perfect answer . . . with all these benefits to offer:

- Tubular steel construction — attractive, long lasting, tough black baked on finish.
- The WR36, WR30 and WR18 are easily assembled by joining tubing pieces as shown on installation instructions. The WR18 also has screw holes for permanently joining tubing pieces should you wish to pick up wood rack for vacuuming or moving when it is full of wood. The WR46L is easy to assemble — just 8 screws — holds approximately ½ face cord of wood.
- All wood racks come knocked-down for easy handling and storage when not in use.

4 Convenient sizes to fit any need

ROHN® WOOD RACK!

The Rohn Wood Rack solves the wood storage problem — in any size — and it can be moved to any location; outside, garage, porch, fireplace. Ideal for other storage uses to fit a particular need. Keep it neat with a Rohn Wood Rack.

WR46L WR36 WR30 WR18

Part No.	Rack Size	Carton Size	Ctn. Cu. Ft.	Wt.
WR46L	46 x 46 x 16	6" x 46" x 16"	2.5	18
WR36	46 x 36 x 16	6" x 36" x 16"	2.0	14
WR30	30 x 30 x 16	6" x 30" x 16"	1.6	10
WR18	18 x 18 x 12	5" x 18" x 12"	.62	7

Compactly Packaged — Easy To Assemble

Unarco-Rohn
Division of Unarco Industries, Inc.
6718 West Plank Road, P.O. Box 2000
Peoria, Illinois 61656

Form No. 77953

Printed In U.S.A.

SHEET R-2133
(Replaces R-2122
or R-2130)

August 2, 1976

UNARCO-ROHN SPECIAL SERVICES AVAILABLE

Non-Engineer Site Inspections or Supervision (Domestic)	$150.00 Per Man Day Plus Travel Expenses
Engineer Site Inspections or Supervision (Domestic)	$200.00 Per Man Day Plus Travel Expenses
Site Supervision (International)	$250.00 Per Man Day Plus All Expenses
Special Concrete Foundation Design Drawings and Calculations (Soil Analysis by Others) (Anchor Blocks, Base Piers, Pier & Pad, Drill & Bell, Mat, Rock)	$ 50.00 Per Hour 200.00 Minimum
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Calculated Stresses & Reactions of Catalog Self-Supporting Towers	$100.00 Per Tower
* Stress Diagram on Standard Guyed Catalog Towers	75.00 Per Tower
Complete Detailed Analysis of Standard Catalog Towers with Back-Up Sheets (Projected Area, Brace & Leg Capacity, Misc. Details)	$100.00 Plus ..... 50.00 Per 100' of Self-Supporting Tower 25.00 Per 100' of Guyed Tower
Complete Detailed Analysis on Special Non-Catalog Towers	$200.00 Plus ..... 100.00 Per 100' of Self-Supporting Tower 50.00 Per 100' of Guyed Tower
Preliminary Erection Drawings Showing Tentative Design Prior to Issuance of Purchase Order	$ 50.00 Plus ..... 35.00 Per 100' of Self-Supporting Tower 25.00 Per 100' of Guyed Tower
Erection and Assembly Drawings for All Towers Supplied	No Charge After Receipt of Purchase Order
Shop Drawings (Fabrication Drawings)	Not Supplied

* Stress diagram shows graphically all tower reactions and all guy stresses.

NOTES:
1) Amounts noted above are net prices.
2) Prices on engineering pertain to Rohn towers only.
3) A man day (10 hours) begins when Unarco-Rohn personnel leave factory (Peoria) and ends upon return.
4) Other engineering services and studies available at $50.00 per hour.
5) Subject to change without notice.

DEALER PRICE SHEET D-944
(New Sheet)

May 15, 1973

BLUEPRINT AND SEPIA PRICES

Prints

Paper Sizes	Net Price
A - 8½" x 11"	$0.30
B - 11" x 17"	0.30
B - 12" x 18"	0.30
C - 17" x 22"	0.40
C - 18" x 24"	0.40
D - 22" x 34"	0.50
D - 24" x 36"	0.50

Sepias

B - 11" x 17"	0.70
C - 17" x 22"	0.80
C - 18" x 24"	0.80
D - 24" x 36"	1.00

Minimum billing charge - $10.00. Prices include domestic postage.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

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METRIC SYSTEM OF MEASUREMENTS

In the metric system of measurements, the principal unit for length is the meter; the principal unit for capacity, the liter; and the principal unit for weight, the gram. The following prefixes are used for subdivisions and multiples: milli = 1/1000; centi = 1/100; deci = 1/10; deka = 10; hecto = 100; kilo = 1000. In abbreviations, both the subdivisions and multiples are used with a small or lower case letter. At one time the multiples were used with a capital letter in some places where the metric system was used.

All the multiples and subdivisions are not used commercially. Those ordinarily used for length are kilometer, meter, centimeter, and millimeter; for capacity, square meter, square centimeter, and square millimeter; for cubic measures, cubic meter, cubic decimeter (liter), cubic centimeter, and cubic millimeter. The most commonly used weights are the kilogram and gram. The metric system was legalized in the United States by an Act of Congress in 1866.

Measures of Length

10 millimeters (mm)	=	1 centimeter (cm)
10 centimeters	=	1 decimeter (dm)
10 decimeters	=	1 meter (m)
1000 meters	=	1 kilometer (km)

Square Measures

100 square millimeters (mm^2)	=	1 square centimeter (cm^2)
100 square centimeters	=	1 square decimeter (dm^2)
100 square decimeters	=	1 square meter (m^2)

Cubic Measure

1000 cubic millimeters (mm^3)	=	1 cubic centimeter (cm^3)
1000 cubic centimeters	=	1 cubic decimeter (dm^3)
1000 cubic decimeters	=	1 cubic meter (m^3)

Measures of Weight

1000 grams	=	1 kilogram (kg)
1000 kilograms	=	1 (metric) ton (t)

Metric and English Conversion Table

Linear Measure

1 kilometer	= 0.6214 mile	1 mile	= 1.609 kilometers
1 meter	= 3.2808 feet	1 foot	= 0.3048 meter
1 meter	= 39.37 inches	1 foot	= 304.8 millimeters
1 centimeter	= 0.3937 inch	1 inch	= 2.54 centimeters
1 millimeter	= 0.03937 inch	1 inch	= 25.4 millimeters

Square Measures

1 square kilometer = 0.3861 square mile = 247.1 acres
1 square meter = 10.764 square feet = 1.196 square yards
1 square centimeter = 0.155 square inch
1 square millimeter = 0.00155 square inch

---

1 square mile = 2.5899 square kilometers
1 square foot = 0.0929 square meter = 929 square centimeters
1 square inch = 6.452 square centimeters = 645.2 square millimeters

Cubic Measure

1 cubic meter = 35.315 cubic feet = 1.308 cubic yards
1 cubic meter = 264.2 U.S. gallons
1 cubic centimeter = 0.061 cubic inch
1 liter (cubic decimeter) = 0.0353 cubic foot = 61.023 cubic inches
1 liter = 0.2642 U.S. gallon = 1.0567 U.S. quarts

---

1 cubic yard = 0.7646 cubic meter
1 cubic foot = 0.02832 cubic meter = 28.317 liters
1 cubic inch = 16.38706 cubic centimeters
1 U.S. gallon = 3.785 liters
1 U.S. quart = 0.946 liter

Weight

1 metric ton = 2204.6 pounds
1 kilogram = 2.2046 pounds = 35.274 ounces
1 gram = 0.03527 ounce

---

1 ton (of 2000 pounds) = .9078 metric ton = 1016 kilograms
1 pound = 0.4536 kilogram = 453.6 grams
1 ounce = 28.35 grams

Pressure

1 kilogram per square millimeter = 1422.32 pounds per square inch
1 kilogram per square centimeter = 14.223 pounds per square inch
1 kilogram per square meter = .2048 pounds per square foot

---

1 pound per square inch = 0.0703 kilogram per square centimeter
1 pound per square foot = 4.882 kilograms per square meter

Velocity

1 kilometer per hour = .6214 miles per hour

---

1 mile per hour = 1.6093 kilometers per hour

Examples: 10 meters = 10 x 3.2808 = 32.8 feet
10 feet = 10 x .3048 = 3.048 meters
100 k/hr = 100 x .6214 = 62.14 MPH
100 MPH = 100 x 1.6093 = 160.93 k/hr

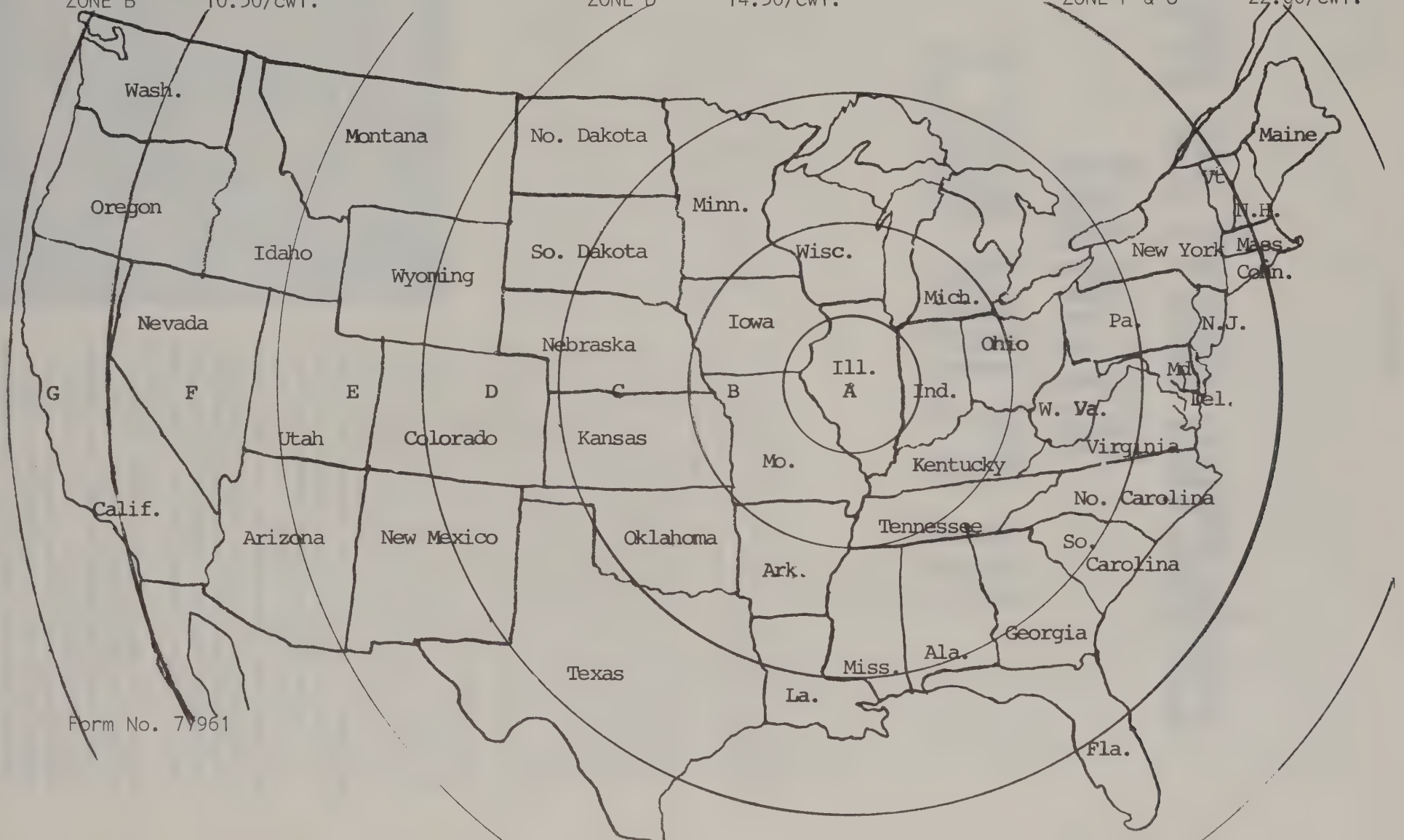
ESTIMATED FREIGHT RATES

September 1, 1977

Zones A - G

To assist you in estimating freight rates for tower sections, we have divided this map of the continental United States into freight rate zones. The rates shown are for terminal to terminal delivery and may not include charges, which may be incurred for delivery to a residence, a phone, or letter notification by carrier prior to delivery or delivery to a point outside the carrier's zone of a city. These are estimated rates only and are subject to change.

ZONE A	$ 8.50/cwt.	ZONE C	$12.00/cwt.	ZONE E	$18.00/cwt.
ZONE B	10.50/cwt.	ZONE D	14.50/cwt.	ZONE F & G	22.00/cwt.



Form No. 77961

Save us from ourselves DANGER 7,200 VOLTS !!!

Look Up

Benjamin Franklin is generally credited by the history books with discovering the scientific principal that electricity is attracted by an elevated metal object, and travels towards ground along any suitable conductor. In Franklin's case the metal object was a key and the conductor was a wet piece of cord.

The United States Government, through one of the innumerable alphabet-zoo agencies which seem to spawn upon themselves multiplying and dividing annually as if amoebas, has recently **re**-discovered the Franklin principal. And in recent weeks the United States Consumer Product Safety Commission (CPSC for short) has undertaken the big-brother task of protecting us from ourselves. In a nutshell, the CPSC wants us to stop flying kites with keys attached.

It is a serious matter. CPSC says that according to their records and statistics, CB radio operators are killing themselves at an increasing and alarming rate; by running their would-be base station antennas and masts and towers into nearby high voltage power lines. CPSC means to see that the carnage slows down, or preferably stops. They mean well, and they are right of course. People should not be killing themselves, and others, when they install base station antennas.

The CPSC group is one of those 'Ralph Nader-inspired' federal agencies that was established to "protect" consumers from the zealousness of manufacturers. The proudest moment to date for CPSC seems to be their inspirational attack on the lowly aerosol can. Yup. . .CPSC is the group that started the fuss over our disappearing ozone layer and the dangers presented by us spraying ourselves to death with underarm deodorant.

CPSC has a rapidly growing task force of bureaucrats who keep monstrous records and files on causes of human injury, suffering and death. They invade the files and records of hospitals and coroners to pull out injury and death statistics; and they catalog their grim records by injury and death categories.

Recently one of their annualized statistics jumped out of their computer file and bit; the statistic was "Deaths Occurring While Erecting Outdoor Antennas". A further sub-category of that grouping separated out deaths caused while erecting and installing (1) **CB** [base] **station antennas**, (2) TV/FM [home receiving] antennas, and (3) other forms of outdoor antennas [including

ham antennas]. Now the computer file system is only as good as the raw data fed to the gigantic electronic memory. Anyone who has ever had a hassle with a credit bureau or a state driver's license bureau or even the FCC's CB licensing computer knows that while **computers** do not make mistakes, **the people** who "load" the giant data banks **do**. People with credit cards who find strange invoices for "hoisery purchased in Bakersfield" on their monthly tabulations (and who never left Buffalo all month) are naturally concerned and upset about the "damn computer thing". The CPSC computer is probably no better. . .nor worse. . .than any other computer.

So when the CPSC computer spit out the "fact" that during a calendar year **"something like 100 people died while installing CB base station antennas"** a whole bunch of bells and whistles went off. The 100 number was far in excess of a "safe level number" which CPSC had established back in their formulative years. 100 deaths was the kind of number associated with things like fires, hazardous occupations such as oil well rigging, and the Golden Gate Bridge. To CPSC, it was unthinkable that 100 Americans went to the great 10-20 in the sky while erecting and installing CB base station antennas; in a single year's time.

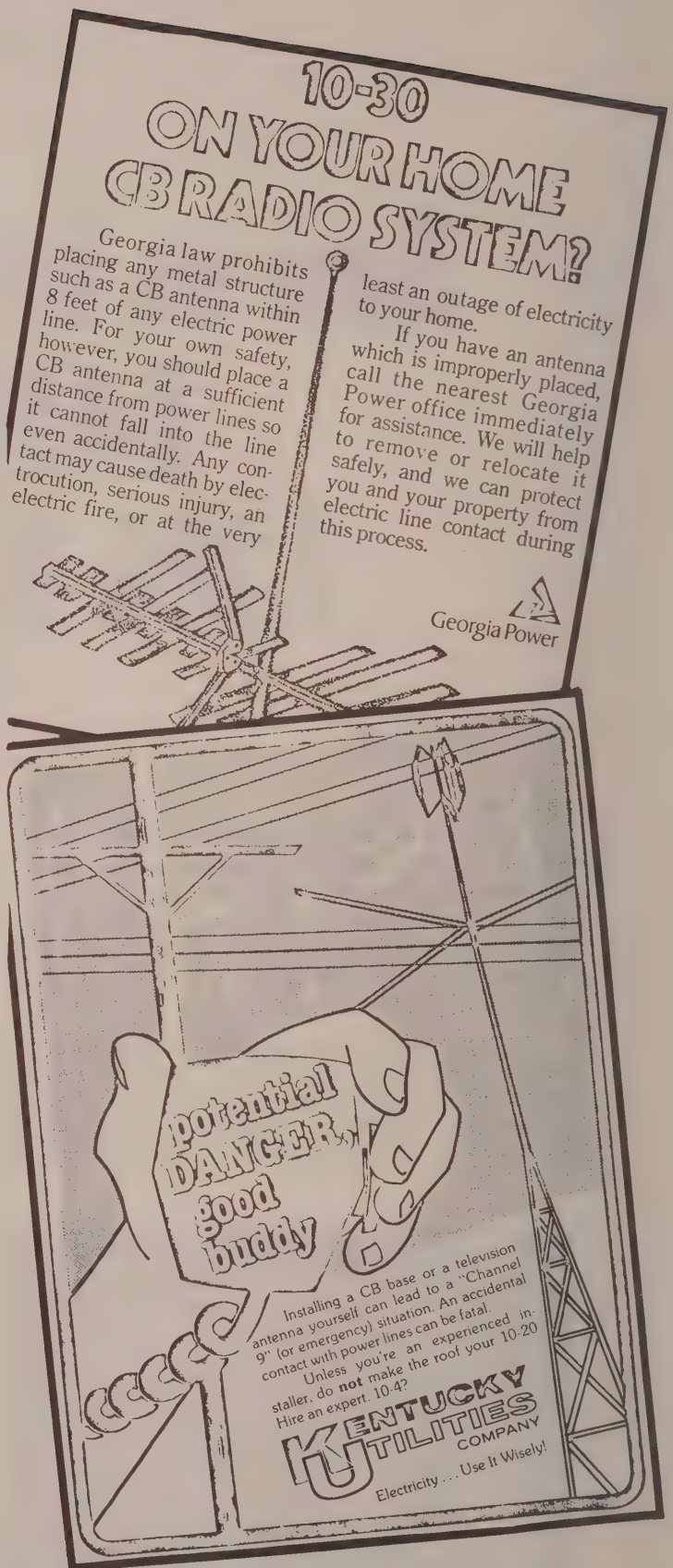
So CPSC flexed its bureaucratic muscles and proposed some new "rules". **The target of the rules are the people who manufacture CB base station antennas.** In the CPSC mentality "something had to be done in the design of a base station antenna to insure that anyone installing one would not die while installing it". It is the same stuff that Mom, the American flag and apple pie are made of. Nobody can argue against safety. As CPSC said time and time again **"How can you measure the value of a human life?"** If is a good question. . .even the insurance companies and the claims courts have never been able to find a satisfactory answer.

How It Happens

The premise is very simple to understand. Electricity is carried from its source to your home and the homes and buildings around you by wires. In most areas of the country the wires are installed overhead, supported by wooden or insulated metal poles. The Power lines are very dangerous. Nobody disputes that. If they weren't so dangerous, they wouldn't be required to maintain 25 or 40 or 60 foot of vertical separation between themselves and the ground below.

Electricity is conducted or carried by metal wires; wires that "conduct" electricity. Electricity will "flow" or "conduct" in **some** natural/manmade elements, and it's blocked or **not** carried by others. So the world's elements and creations fall into two broad categories; things that conduct electricity and things that don't.

Radio frequency signals (RF) are just like electricity. **CB radio transmissions are RF or radio frequency transmissions.** Our radio frequency signals conduct or carry in two mediums; the **same** type of metal structures which transport electricity, and, through the air. Fortunately for


10-30
ON YOUR HOME
CB RADIO SYSTEM?
Georgia law prohibits placing any metal structure such as a CB antenna within 8 feet of any electric power line. For your own safety, however, you should place a CB antenna at a sufficient distance from power lines so it cannot fall into the line even accidentally. Any contact may cause death by electrocution, serious injury, an electric fire, or at the very least an outage of electricity to your home.
If you have an antenna which is improperly placed, call the nearest Georgia Power office immediately for assistance. We will help to remove or relocate it safely, and we can protect you and your property from electric line contact during this process.
Georgia Power
potential DANGER, good buddy
Installing a CB base or a television antenna yourself can lead to a "Channel 9" (or emergency) situation. An accidental contact with power lines can be fatal.
Unless you're an experienced installer, do not make the roof your 10-20. Hire an expert. 10-4?
KENTUCKY UTILITIES COMPANY
Electricity . . . Use It Wisely!

THE ELECTRIC UTILITY companies are "plainly" concerned about the rapid rise in electrocution deaths by people installing or taking down CB base station antennas. Some of their recent advertising, from dozens of sources collected by CBA in preparing this member-report, are shown here. The CPSC, equally concerned, issues press releases with "recommendations" such as ". . .Tie-off the antenna with a rope so that in the event it should fall during installation or removal it will not touch power lines. . .". The CPSC has apparently never actually installed a CB base station antenna. . .but at least they are trying!

everyone involved, man made electricity does not conduct through the air (although the Benjamin Franklin electricity [lightning] does pass through the air very well).

So CB base station antennas are largely conductive; that is, they **are** constructed from largely metal parts. The metal parts may be in a different physical form than say the overhead electrical wires that conduct electricity, but the physical form has no importance here. The metal content is what counts.

Now CB base station antennas work better than CB mobile antennas because (1) the base station antenna is physically larger than a mobile antenna (in other words it has more transmit and receive gain than a typical mobile antenna), and, (2) when we get the base station antenna installed, it is taller or higher than a typical mobile antenna. Height above ground in CB's world translates to better, more distant signal range or coverage. **Even a mobile antenna**, erected high above ground, will provide far superior coverage; when compared to the **same** mobile antenna installed down at ground level on the back lip of your car.

Of the two factors (antenna size and height above ground), **the best way to achieve better base station performance is to get the antenna above ground.** The original CB rules restricted CB base station antennas to a maximum height above ground of 20 feet (if the antenna was mounted on a free standing tower) or 20 feet above a building or tree if the antenna was installed on an existing structure. Some 20 months ago the FCC changed that restriction to 60 feet above ground to the **top** of the CB antenna, for omni-directional antennas [rule section 95.437 (a)]. The CB users who had not already installed over-height antennas (i.e. illegal-in-height antennas) reacted by rushing out and ordering masts and towers and other appurtenances to allow them to increase their base station antenna heights to the new 60 foot maximum allowable.

So now we have all of the major elements in place:

(a) neighborhood power lines at **30-60** feet **above** ground;

(b) a CB base station antenna, constructed from metal, which **will** conduct electricity if by some happenstance it should come into contact with wire-carried electrical energy;

(c) **an FCC allowable** 60 foot maximum height for CB base station antennas.

Logic Says

Logic (the brother of the Chinese philospher Confucius) suggests that nobody who is smart enough to turn on an electric light switch is going to **deliberately** stand underneath or below an overhead outdoor power line **and shove a piece of metal up into the power line.** Logic does not work at CPSC (we are not sure he even lives in the nation's capital anymore!).

CPSC says logic has nothing to do with the problem. **"People"** says a CPSC spokesperson **"are not always logical; people do dumb things, and when they do dumb things, they must be protected from their own folly."**

And so the same great bureaucracy that brought us federally mandated seat belts, the present double-nickel speed limit and flu vaccines is setting out to protect us from doing something dumb such as standing under an overhead power line and shoving a piece of metal up into the power line.

Well, that is almost true. Actually, the bureaucratic mind at CPSC is not concerned with just **any** piece of metal. They are **only** concerned with **particular types** of metal configurations; CB base station antennas to be very precise.

What They Propose

CPSC is not unlike other federal bureaucratic agencies. Under a Congressional mandate to promote a safer life for American consumers, CPSC monitors unsafe things in our life. When they find an unsafe thing, they issue a notice of proposed rule making. That means they put out a formal notice and tell anyone listening that they are about to adopt some new "rules and regulations" which (they say) if adopted and followed will eliminate (or greatly reduce) the unsafe condition they have spotted.

So here they come into the CB world, hard on the heels of their computer spitting out a red flag concerning CB base station antenna installation deaths, and they are proposing CPSC rules "which if adopted will greatly curtail the carnage (deaths) that seem to be coming about as a result of unsafe CB base station antenna practices". They have a two pronged attack on CB base station antenna deaths:

(1) **To warn everyone**, clearly and without opportunity for mis-interpretation, of the "hazards" involved with installing a CB base station antenna;

HOW HIGH IS SAFE?

Use this table to calculate the **maximum height** you can **safely go** with your CB base station antenna **(distance UP is to TOP of CB antenna when fully extended),** as a function of the **height** of the nearest power line **and** the **horizontal** (ground) **distance** from base of power pole to base of CB antenna (or point directly under antenna if on roof). **Include height of roof if** antenna is **not** mounted starting at ground level, when computing total CB antenna height.

Power Pole Height	Horizontal Distance Between two	Maximum Safe CB Antenna Height
25'	20'	30'
25'	30'	37'
25'	40'	45'
25'	50'	53'
25'	60'	63'
25'	70'	72'
30'	20'	34'
30'	30'	40'
30'	40'	48'
30'	50'	56'
30'	60'	65'
40'	20'	42'
40'	30'	48'
40'	40'	54'
40'	50'	62'
40'	60'	70'

(2) **To create a new type of CB base station antenna** which is so designed and constructed that if a user wanted to pick it up and shove it into a high voltage power line, the user would walk away without injury.

It is a noble challenge. How do you stop people from killing one another with guns, for example? Well, you might start off by adopting rules that require every manufacturer of guns and bullets to affix a permanent label or tag on every gun and bullet sold which clearly warns the user that **"Misuse of this product can result in serious injury or death"**. That would certainly put people on notice of the danger of guns alright. Getting the gun to fire properly with a "permanent, legible, readable tag attached to the bullet" might slow the users of the guns down also.

Then you might come back and specify a set of CPSC standards which require that even if somebody somehow managed to get a bullet with label attached into the gun's chamber, and then pointed the gun at themselves (or somebody else) that the gun's CPSC standards' would be such that the bullet would not injure or kill the "dumb" person that got in the way of the bullet.

For the record, CPSC is **not** after people who shoot or get shot by guns; **at least not today.** They are after people who are "dumb enough" to take a CB base station antenna installation and run it into an overhead power line.

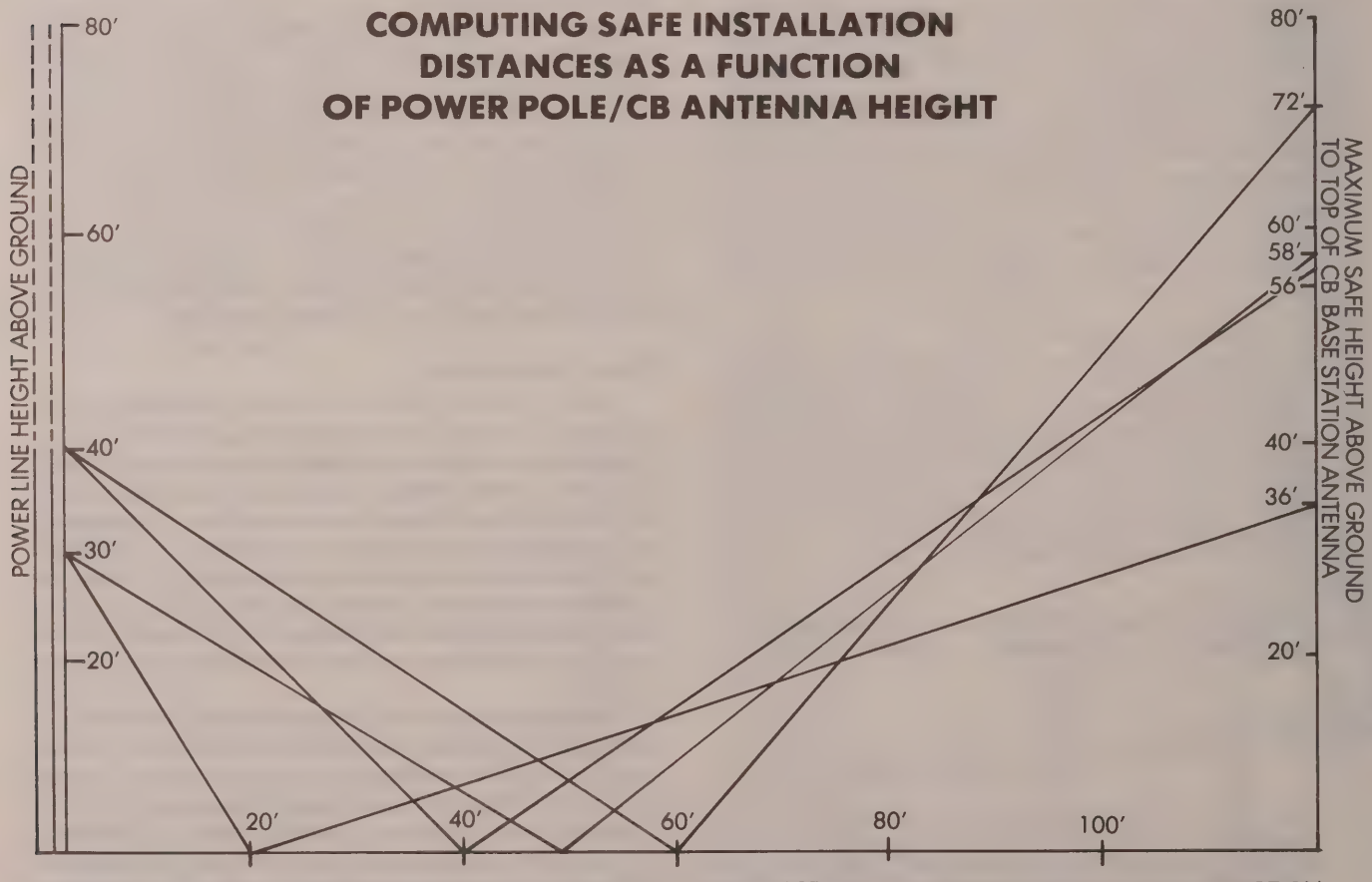
So here is what CPSC is proposing, in the form of a formal rule making proposal which is due out very shortly after you read this report to members.

1) **That each and every component part of the CB base station antenna installation "be clearly and permanently labeled with a warning such that the potential user of the product is given every adequate opportunity to acquaint himself with the potential dangers and hazards of such an installation".**

That deserves some investigation. Let's start at the top of the installation, with the antenna itself. CPSC is proposing a rule that says a label must be affixed to the antenna itself. The label would read something like this:

YOU CAN BE KILLED IF THIS PRODUCT COMES NEAR ELECTRIC LINES. READ INSTRUCTIONS.

The label proposed would be artfully decorated with some universal recognized symbol (such as the electrically-zapped 8 sided 'stop sign' shown here) to catch the attention of anyone handling the antenna. The label will be printed following CPSC



THE MINIMUM SAFE DISTANCE- depends upon the (1) height of the power line, and (2) the horizontal (straight line) distance from the power line pole to the base of the CB base station antenna, and (3) the height of the base station antenna. Know the height of the power line at its LOWEST point (elevation) and the horizontal distance from pole base to antenna base BEFORE deciding how high you can safely raise the CB base antenna. See table here for safe distances (i.e. horizontal separation).

guidelines as to the color, lettering size and style, and permanency of the label itself in all forms of foul weather. In a nutshell, the label must stay on for no less than five years. In case you are not into labels. . .those 'guidelines' are not describing an inexpensive label, a point we'll come back to shortly.

OK—so the antenna has a label. **Hopefully people will stop and read it.** And think about the hazard of what they are about to do. But if they do not read **that** label, and then stop and read the detailed instructions **(as the label commands)** . . .they'll have several more chances, according to CPSC.

Now lets take the tower. If you have chosen a Rohn 25G type of tower (which comes in ten foot sections), CPSC will require that an identical or similar label appear "at the middle segment" **of each and every ten foot section** of tower. Five tower sections, five labels. Still no big deal. . .except that apparently (we are told) man has not yet advanced label technology to the point where a permanent label can be stuck onto a **galvanized** piece of metal (welded tower sections, at least the good quality jobs, are typically galvanized to prevent rusting). CPSC tells people like Rohn, who manufacture towers, **"OK—make up a metal plate that wraps around the tower leg and rivets or bonds to the leg. . .and put the warning on that plate."** Metal plates cost money. . .but as the CPSC spokesperson frequently reminds you "Who can put a price on a human life?"

It's probably a good thing that CPSC didn't exist in the late 1800's in western America. They would have had a lot of trouble with the posters that hung on every saloon wall:

WANTED DEAD OR ALIVE—$500. REWARD FOR REDDY KILOWATT/ALIAS THE 'ZAPPER'

Now if you did not have the bucks to shell out for one of the fine triangular-sided metal towers from Rohn, EZ-Way, Tristao or the dozen and one other tower makers, you might venture into an electronics supply house and purchase one of those telescopic metal masts (sometimes called 'zip-up-masts'). For **these** products CPSC also wants 'permanent labels', on **each** section. If there are **four** ten foot sections telescoped together. . .**that's four labels.** Each with the **"kill"** warning.

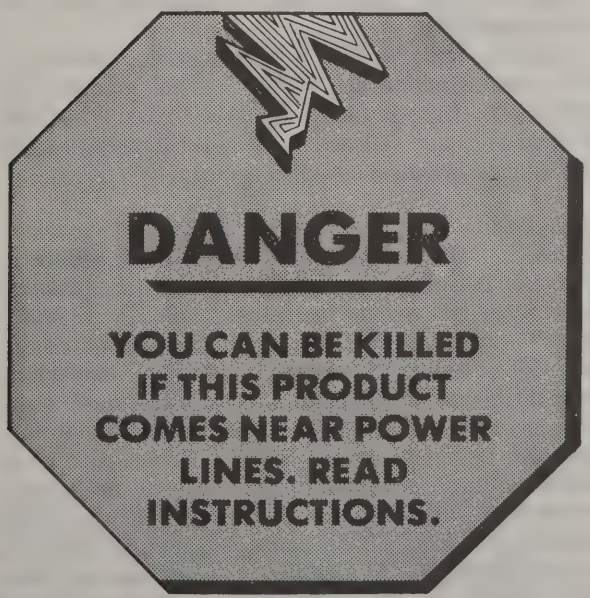
Or you go into the CB shop and you decide to piece-meal-together all of the parts you need to install not a zip up mast or steel tower base station installation; but rather a simple tripod or chimney-strap mount. Under the CPSC dictum here is what you will find:

(1) **The chimney strap kit** will have a label on each of the strap parts;
(2) **The tripod rooftop mount** will have a label;
(3) **The guy wire 50 foot hanks** will be packaged in such a way that they also have a label attached;
(4) That little five foot piece of rolled-steel tubing that you have been accustomed to buying for a couple of bucks in the past. . .will have a "kill" label attached. If you buy ten of the short pieces of steel tubing, you get ten "kill" labels.

To re-coin a pun. . .**overkill.**

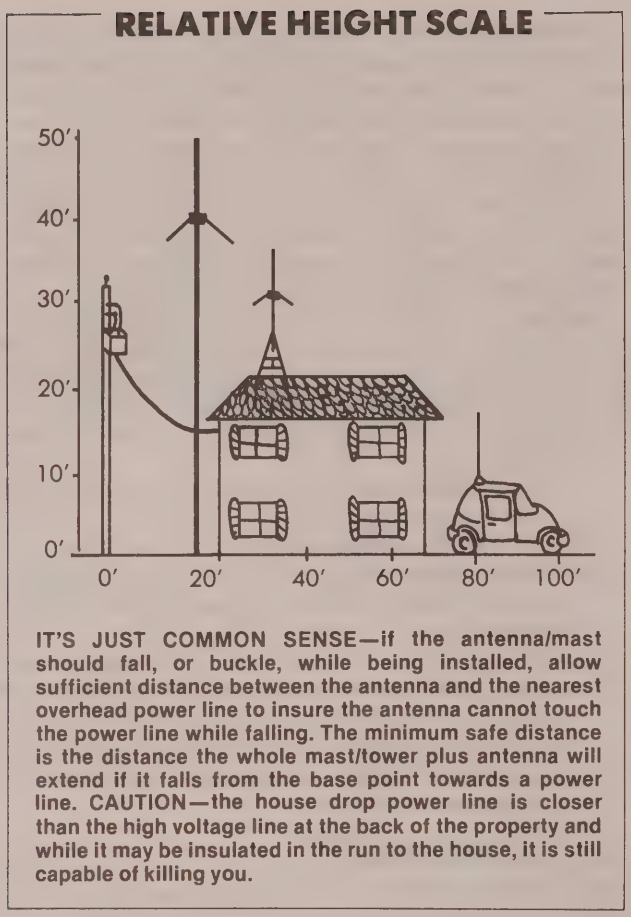
But CPSC is just warming up.

Now, the label says "Read the Instructions". What instructions you ask? The instructions attached to the tower section, or the telescopic mast, or the chimney straps, or the tripod mount. Or the 5 foot piece of steel tubing. Yup. . .CPSC says **"anything and everything which might be sold for the installation of a CB base station antenna installation shall have** (1) **a warning label of the correct wording, style, size and permanency, and,** (2) **a complete set of safety tips and suggested installation techniques".**

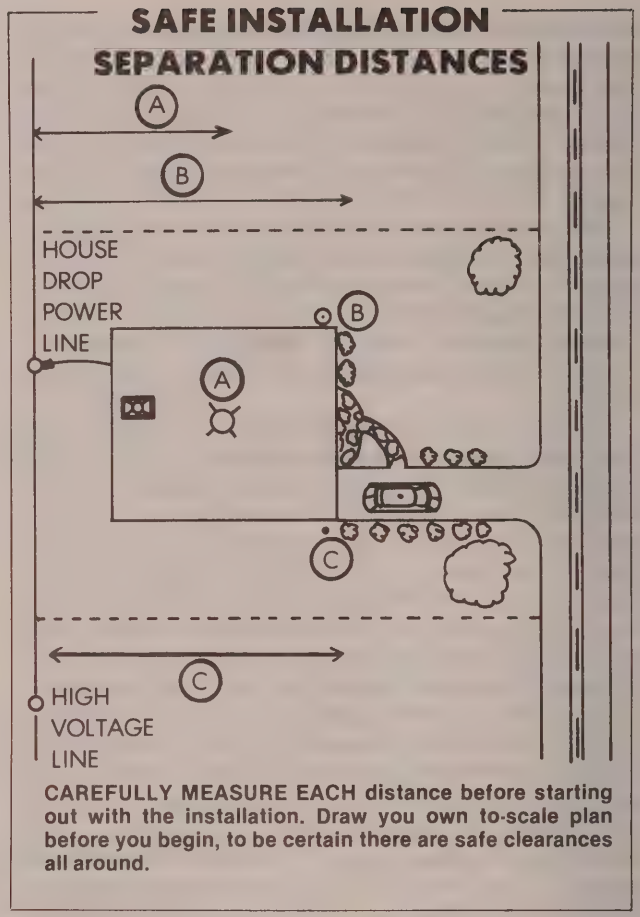


THIS MAY BE THE WARNING you will soon be seeing on CB base station antenna products after CPSC finishes its rule making proposal.

CPSC HAS PUT THEIR ARTWORK PEOPLE to work preparing several possible "labels" or "signs" which when finally accepted will start appearing on CB base station antenna products.



IT'S JUST COMMON SENSE—if the antenna/mast should fall, or buckle, while being installed, allow sufficient distance between the antenna and the nearest overhead power line to insure the antenna cannot touch the power line while falling. The minimum safe distance is the distance the whole mast/tower plus antenna will extend if it falls from the base point towards a power line. CAUTION—the house drop power line is closer than the high voltage line at the back of the property and while it may be insulated in the run to the house, it is still capable of killing you.



CAREFULLY MEASURE EACH distance before starting out with the installation. Draw you own to-scale plan before you begin, to be certain there are safe clearances all around.

Let's see now. We have (1) the antenna, (2) the guy wire, (3) a telescopic mast with four sections, (4) a base mount to sit on the ground, (5) a roll of coax (oops. . .did we forget to tell you that coax, if used with a base station installation should ALSO have a label attached and a set of instructions? Let's see. . .what kind of regulation can CPSC write for labeling coax? Should there be a label every 100 feet? Every fifty feet? How about one per foot, with an instruction manual for each label? 100 feet of coax equals 100 labels and 100 instruction manuals.). A fellow could spend several hours disattaching several hundred instruction manuals from the component parts of a typical base station installation. When he got done, there is every probability he would be too tired to even attempt installing the antenna!

OK. . .so somehow all of the dumb people who insist on running their CB base station antennas into live/hot power lines would then be warned of the hazard. CPSC will see to that.

"You can lead a horse to water. . .but you can't make him drink". Burying a "dumb guy" in 100 or 200 instruction manuals, all stating **"Look up dummy** before **you lift the antenna into the sky. . ."** won't do much good if the guy is like **one** of the 1976 accident cases CPSC claims they investigated.

"We sent a field team out to investigate the details of a CB base station antenna electrocution death this past year. When we got there we found that the fellow who got killed was actually trying to install his base station antenna on top of **the power line pole in his back yard! He had attempted to climb** up through **the electric wires** with the base antenna **and naturally when the metal antenna touched the hot wires he got zapped"** related the CPSC spokesperson. **"And do you know what we found when we got to the death site? The antenna was actually in place,** on top of the 7,200 volt power pole, **above the high voltage lines. Even after someone was killed trying to put an antenna on top of the pole,** somebody else **came along and finished the job. . .miraculously escaping death in the process!!!".**

Hummm. The first fellow obviously needed a CPSC mandated safety manual. The second guy deserves the Distinguished Service Cross; which he will probably get as soon as they let him out of the state mental hospital on a pass again.

Kill/Kill/Kill

CPSC is still just warming up. **"Our mandate is not to put people** (such as CB base station antenna manufacturers) **out of business; only to promote safety"** says A CPSC person. **"We could easily solve this problem by issuing a rule that would ban the installation of CB base station antennas"** says the same spokesperson. The remark was obviously **intended to upset** more than a dozen CB base station antenna manufacturers on hand for a mid-February CPSC sponsored "hearing" on the problem, at CPSC's Bethesda, Maryland 10-20; a meeting which CBA attended to put in our two-cents worth and to learn what it is this "new" federal agency wants to "do for us". Significantly, the CPSC reports **"Of all of our investigations to**

date, we have not found a single incident which suggests to us that the CB base station antenna has failed in any way".

"Now as for labeling the **outside** of the antenna packages" went on the CPSC meeting representative". . .we think we will propose that the carton or display container for all CB base station antennas shall have a similar or identical label."

In other words, when you walk into a store that sells CB base station antennas in the future, and you see an artfully arranged display of 100 CB base station antennas lined up against a wall. . .you will see a prominently displayed label running down the full row of antennas. One word will stick out. . .again and again. "Kill/Kill/Kill. . .Kill". Every antenna will warn you that "YOU CAN BE KILLED (by this) PRODUCT".

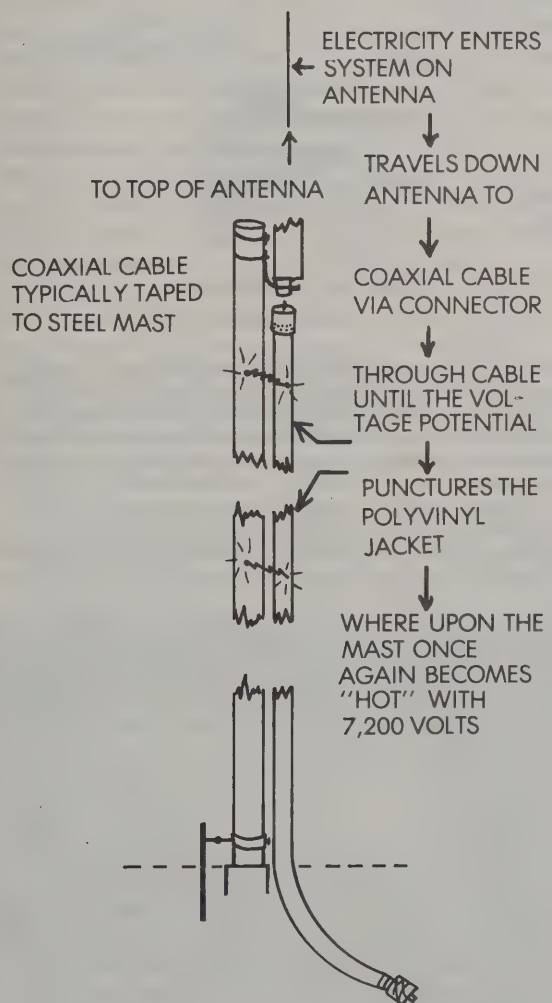
The facts are not quite verifiable here. But that is our friend's logic again. CB base station antennas don't kill you; electricity kills you.

A prominent antenna manufacturer voiced concern as to what might happen to CB base station antenna sales if every base station product repeated the "KILL" warning over and over again.

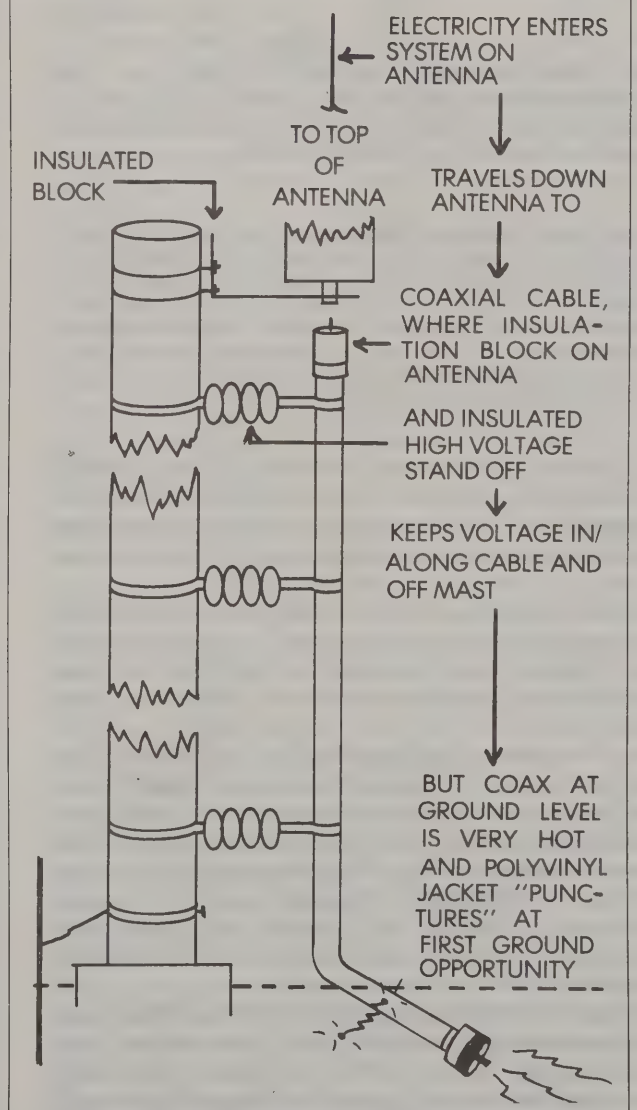
CPSC. "How can you put a value on a human life?"

Overreaction? Perhaps. But by whom? CPSC? Or the antenna manufacturers? Perhaps each is slightly guilty of getting carried away; although the evidence begins to suggest that the CPSC people are about to practice discrimination.

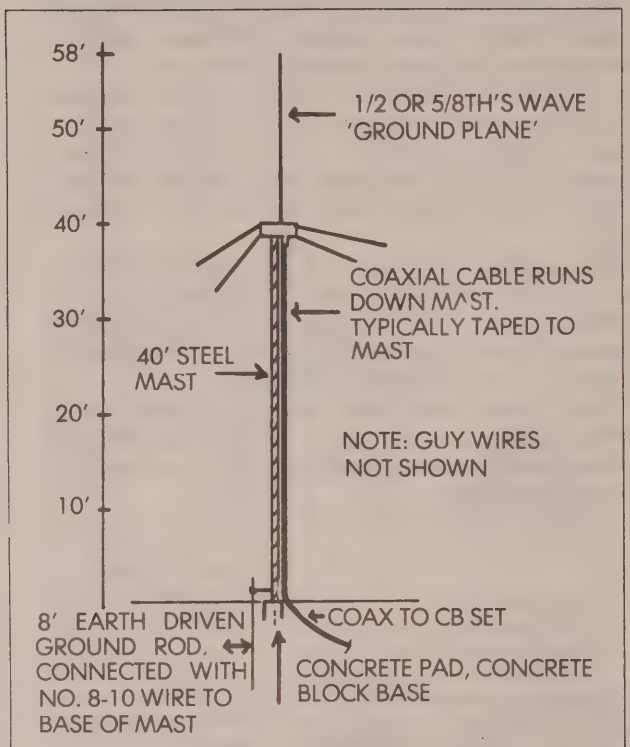
"What about television antenna parts? And amateur radio antenna parts? Will CPSC require that they too be marked 'Kill/Kill/Kill' " asked CBA at the meeting.


ELECTRICITY ENTERS SYSTEM ON ANTENNA
TRAVELS DOWN ANTENNA TO
TO TOP OF ANTENNA
COAXIAL CABLE TYPICALLY TAPED TO STEEL MAST
COAXIAL CABLE VIA CONNECTOR
THROUGH CABLE UNTIL THE VOLTAGE POTENTIAL
PUNCTURES THE POLYVINYL JACKET
WHERE UPON THE MAST ONCE AGAIN BECOMES "HOT" WITH 7,200 VOLTS

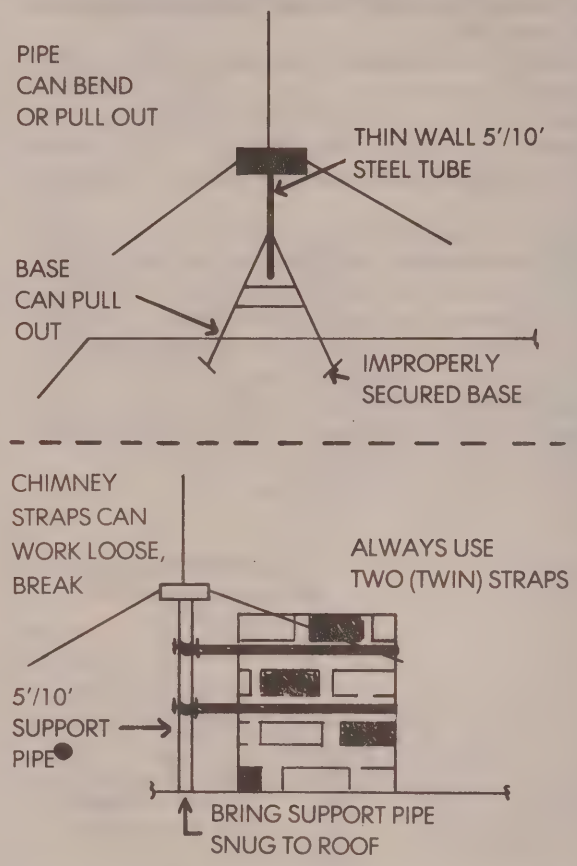
HOW HIGH VOLTAGE CAN TRAVEL THROUGH antenna to coaxial cable and then to mast/tower even if the antenna is insulated from the support structure. Coaxial cable has maximum voltage handling ability of 5,000 volts when new and it loses this property rapidly when weathered.


ELECTRICITY ENTERS SYSTEM ON ANTENNA
TO TOP OF ANTENNA
INSULATED BLOCK
TRAVELS DOWN ANTENNA TO
COAXIAL CABLE, WHERE INSULATION BLOCK ON ANTENNA
AND INSULATED HIGH VOLTAGE STAND OFF
KEEPS VOLTAGE IN/ ALONG CABLE AND OFF MAST
BUT COAX AT GROUND LEVEL IS VERY HOT AND POLYVINYL JACKET "PUNCTURES" AT FIRST GROUND OPPORTUNITY

CPSC IS SUGGESTING INSULATING coaxial cable downline and the antenna radiator from the steel mast/tower upon which it is mounted. By suspending 5,000 volt break-down cable from mast, high (7,200 volt) AC electricity would stay inside or along coaxial cable at least until the electricity got to a point where the cable laid on the ground. Then it would "puncture" through the cable to the nearest ground source.


58'
50'
40'
30'
20'
10'
1/2 OR 5/8TH'S WAVE 'GROUND PLANE'
COAXIAL CABLE RUNS DOWN MAST. TYPICALLY TAPED TO MAST
40' STEEL MAST
NOTE: GUY WIRES NOT SHOWN
8' EARTH DRIVEN GROUND ROD. CONNECTED WITH NO. 8-10 WIRE TO BASE OF MAST
COAX TO CB SET
CONCRETE PAD, CONCRETE BLOCK BASE

THE BASE INSTALLATION should have an eight foot earth driven ground rod at the base of the mast/tower which is attached to the bottom of the mast/tower with heavy clamps and No. 8-10 copper wire. One of the best ways to secure the base of the mast is to drive or set a smaller diameter solid rod 3-4 feet into the ground, with 2-3 feet extending above ground; setting the base of the mast down over the driven rod for support.


PIPE CAN BEND OR PULL OUT
THIN WALL 5'/10' STEEL TUBE
BASE CAN PULL OUT
IMPROPERLY SECURED BASE
CHIMNEY STRAPS CAN WORK LOOSE, BREAK
ALWAYS USE TWO (TWIN) STRAPS
5'/10' SUPPORT PIPE
BRING SUPPORT PIPE SNUG TO ROOF

WEAK POINTS ON NEAR-ROOF installations. Tripod mounts are often poorly attached to the roof proper (use long bolts that go through the roof into 2 x 4 pull-studs under or within the roof/attic). Do not merely set the tripod in place and hope it will stay in place with a couple of guy wires. It won't. NEVER use more than a 5 foot piece of steel pipe/tube in the tripod mount and keep the amount of pipe extending above the tripod (between top of tripod and bottom of antenna where it attaches to the pipe/tube) to 2 feet or less. With the chimney mount use no fewer than 2 HEAVY DUTY chimney straps; making certain the chimney can take the strain. Loose bricks or mortar suggests otherwise. Run no more steel support pipe/tube than necessary to clear top of chimney by 2 feet. NEVER attempt to stack 5 or ten foot pipe/tube sections together with either a tripod mount or a chimney mount.

"Our statistics reveals that the sudden increase in antenna erection electrocution deaths is **primarily** a CB antenna problem; we have **not** seen an increase with television antennas or amateur antennas" responded the CPSC person.

Does that mean that television antennas will have **no** labels? That **is** what it means. Cannot metal television antennas also "kill" in the same sense that a CB antenna can "kill"? **Of course they can. . .**

Let's take the lowly 5 foot piece of rolled steel tubing; the one you walk into an electronics store and buy to support your antenna on a tripod mount or chimney mount. CPSC says the 5 foot tube will have to have a "kill label" **and** a set of instructions attached. But **only if** it is going to be used for a CB antenna installation. If it is going to be used for a television antenna installation. . .CPSC says it needs no label or instructions.

Hummm. **Now we have two stacks of 5 foot pipe in the store.** One marked "for CB antennas" and one marked "for all other antennas". The piles have the same pipe, possibly from the same mill run. Only one has a "permanent five-year-life" label attached on its mid section and wired to the pipe is a plastic bag with an 8 page "safety booklet" inside. In both cases the piece of pipe leaves the manufacturer with about 75 cents in costs run up. But then the "CB pipe" has a 25 cent label and a 15 cent plastic bag plus instructions attached. At the retail level, after the product has been suitably marked up, the "CB pipe" ends up costing the buyer approximately 50% more money.

When you walk into a store to buy **that** piece of pipe. . .**which one** are **you** going to buy? The "all other antennas" pipe that costs 40-50% **less** or the "CB pipe" that has the label and plastic instruction bag. . .costing more?

"I can see it now. Suddenly everyone who manufactures parts for antenna installations will attach a small, non-permanent, **1 cent label** that peels off. It will say 'Note: This product not recommended for CB antenna installations' "remarks a CPSC sponsored meeting attendee.

An attorney from Arizona said it all:

"Government bureaucrats are zealots. They are always sure they are right and the public is wrong. . .".

Phase Two

"The hazard is not inherent in the product itself" admits CPSC. **In other words, the antenna is not dangerous.** Dumb people are dangerous. To themselves, and to others who might be around them. We'll see why this is so shortly.

The CPSC ruling on (1) exterior product-container labeling, (2) on-the-product-itself labeling, and (3) a required 'safety manual' is all but cast in concrete. The bureaucratic wheels are moving, and as a CPSC spokesman noted **"The** (five) **Consumer Product Safety Commissioners have decided that the number of deaths** (attributable to CB base station installation accidents) **has reached the point where some regulations are necessary".** This, CPSC admits, is not the end of the exercise with the 'agency'. For CB antenna manufacturers, and for you, the CB using public, it may well mark only the beginning.

Phase two is a new set of "standards" for CB base station antennas. Federal agencies love to write "standards". The CPSC's of the world write standards better than anyone else in the world. They thrive on paperwork, standards, **and the enforcement of standards.** Their mandate, they feel, is to protect consumers. Standards, they feel, can be drawn so that nobody can be hurt or killed while using a product. No matter how dumb the user may be.

An agency such as CPSC thrives on creating new paperwork and studies. One of the many studies they claim to have conducted reveals that **"the average education level of the person who died during 1976 while installing a CB base station antenna was. . .the sixth grade".** Our use of the word 'dumb' may be excessive; **un**educated may be more apt.

"Do people with sixth grade equivalent educations read instructions manuals?" someone asked. Do they or would they heed 'Kill labels' on the packages or products involved in antenna installations? The answer is possibly no.

7200 VOLT BODY ENTRY point typically raises only small welt or "pin-prick" hole in skin (minor lesion).

CPSC believes some lives might be saved if there are adequate warnings although they admit **"It appears people are aware of the hazards already".** So the next step, or phase two, is to **change the design** of CB base station antennas. The goal here is to make the antenna function in such a manner **"that a person could mount a CB base station antenna on a five foot piece of pipe, lift the antenna above their head with the pipe and walk directly into a 7,200 volt line. . .and not be injured or killed."**

Still smarting from the CPSC admission that "incidents we have investigated indicate the antenna has **not** failed in **any** way" and not too sure how large, multi-colored 'Kill labels' will impact on the consumer marketplace, the CB antenna manufacturers reacted rather violently to the Phase Two plan.

"The antenna needs to be insulated from the mast" says the CPSC spokesperson **" so that if the antenna metal does accidentially come into contact with an overhead powerline the electricity cannot travel through the antenna and into the metal tower/mast to reach the person or people below".**

Electricity flows towards a ground circuit. It, like lightning, is attracted by something called 'ground potential'. Overhead, on the wires, it is 'elevated above ground' (both physically and electrically). Electricity constantly wants to 'flow to ground' and it is constantly looking for the 'easiest path to ground'. In electrical-talk, the 'easiest path to ground' is along a set of conductors that have the lowest 'resistance' to the flow of the electricity. A hypothetical large, bulky, wire connected at the bottom end directly into a moist piece of ground, and connected at the top end to the electrical lines would provide the **minimum** resistance to ground for the flow of electricity.

A CPSC cited example of a horrible CB tragedy illustrates. There are eight people involved in putting up a CB antenna with a mast constructed from sections of **water pipe**. The mast is 40 feet long and the antenna sits atop the mast. The installers have attached some guy wires at the 40 and 20 foot level, and the whole array is **laying on the ground.** Three people climb atop the roof, so they can grab the mast as the five on the ground lift the **60 foot long structure** up on one end. In the process of lifting, the mast reaches a precarious position where the 60 foot long 'structure' is unbalanced. The mast is **almost** to the house line where the three people on the roof are ready to grab ahold and bring it up snug against the side of the house. **But the base on the ground starts to slide away** and the five on the ground can't hold it. The 40 feet or so above the roof **starts to sway** back and forth and then because of the structural design of the pipe the "whipping" of the top 20 foot of **mast** causes the mast to buckle at about the 25 foot level. The buckled section starts to fall over, **away from the house.** The three fellows on the roof grab ahold to try to stop the fall but they are **below** the buckle point and it falls, slowly almost in slow-motion. . .**into a 7,200 volt line.**

Up until this point all eight have been so concerned about doing their individual best to keep it from falling that all have their hands firmly affixed to the metal structure.

When the buckling mast and antenna comes into contact with the 7,200 volt line, electricity surges through the antenna, **and down the mast.** All five, **standing on the ground,** are zapped and three of them die instantly. Two others die within a couple of days. The electricity enters their bodies through their hands popping small pin-prick holes in the palms as it enters the body. The body heat builds rapidly and the paralyzation that accompanies the shock makes it impossible for the hands to release the metal pipe. The electricity surges through the bodies and seeks ground through the soles of the feet. **The flesh on the base of the feet flies off. . .** leaving jagged holes in the feet with protruding bones. Death, if not instantaneous, is only a matter of time.

All five died. The three on the roof, **although badly burned,** lived. . .because they were **not** on the ground and consequently their bodies did **not** provide a 'low resistance path' to (earth) ground for the surge.

CPSC cites this (and other examples) to illustrate how these people "could have been saved" **if** the antenna **had beeh insulated** from the metal water pipe. An insulated antenna would provide no 'ground path connection' for the dangerous voltages on the power line.

It was a terrible tragedy. . .**and a dumb mistake.** CPSC says "a very high percentage of the accidents they have investigated have occured when people have selected 'hardware store' **water and gas pipe** to screw or weld together into sections to form a mast". Virtually none of the accidents have occured when the installation was using freestanding towers, and a relatively small number have occured with the ready-built $30-$50. telescopic masts.

An insulated antenna sounds like it would be peachy-keen. It presents several very real problems however:

(1) A CB base station antenna is essentially a "grounded antenna; that is, a 'ground-plane' antenna functions because it is at the same "resistance potential" as the ground itself; **or very close to it.** There are any number of clever re-designs that **might** be done to change the way most CB base station antennas function. . .but the trade off's in terms of higher costs per antenna, and lower operating efficency would probably not be accepted by the typical CB user.

In other words, if a totally safe CB base station antenna (one you could 'walk into a high voltage power line' and survive) was brought out onto the market, in response to CPSC requirements, we might be looking at **2-6 times as much per antenna as we now pay,** and in the process the chances are very good **the performance would suffer.** At least that is the first engineering response we hear from antenna manufacturers.

(2) **Then there is the coaxial cable problem.** The coaxial cable connects to the antenna before the antenna is elevated to its final height. The center conductor on the coaxial cable connects directly to the top vertical portion of the base station antenna (the radiator portion). The shield or braid just under the black vinyl jacket of the cable connects to the 'ground plane elements' or 'radials'. The electricity typically enters the antenna system along the top vertical radiator section; **the portion that is connected to the center conductor on the coaxial cable.**

The electricity may be any voltage from 220 volts (the voltage level which most houses receive through step-down power transformers on the poles behind the house) to as much as 60,000 volts. Most of the accidents have been with the commonly-found 7,200 volt (or 7.2 kV) lines; **the type you probably have behind your house.** Now the coaxial cable is tested for **its ability** to withstand high electrical voltages. The common RG-8 type (50-52 ohm) cables we so often use for base station installations will:

(A) Handle a maximum voltage of 5,000 volts before the polyvinyl jacket on the outside of the cable ceases to be an adequate insulator. In other words, **brand-new** RG-8 types of cable, with over 5,000 volts applied to the cable shield portion, will short **through the black outer jacket** and the polyvinyl jacket will no longer keep the electricity from 'jumping' to the nearest metal object; such as the antenna mast, tower or support pipe.

(B) The coaxial cable center conductor will handle even less AC voltage than the 5,000 volt rating of the 'when-new' jacket; some will collapse with as little as 1,500 volts present.

The smaller cable (RG-58 type as used in most mobile installations and on occasion for base installations) will withstand an outer shield voltage of only 1,900 volts; far below the 7,200 volts commonly found 40 feet above your backyard.

So what happens to the antenna system and the people putting up the antenna if we have an "insulated" antenna (see page 18 here) and the

7200 VOLT EXIT POINTS will be anyplace on body where high voltage can find "escape route to ground".

insulated antenna comes into contact with 7,200 volts?

First of all, the voltage surges into the center conductor on the coaxial cable and then through the white inner insulation **and into the shield.** From the shield it jumps **through** the polyvinyl jacket (with a 5,000 volt-when-new rating) and. . .onto the metal surface of the antenna tower, mast or pole.

Yes, we are right back where we began. . .if the power line contacted by the CB antenna **is in excess of the voltage rating of the coaxial cable.** We have **not,** at this point, protected anyone from anything.

CPSC says "we" can solve this problem if we:

(1) Follow antenna installation standards which include and require that all CB base station antennas "insulate" the coaxial cable from the tower or mast "with porcelain insulators capable of withstanding the high voltages", and/or,

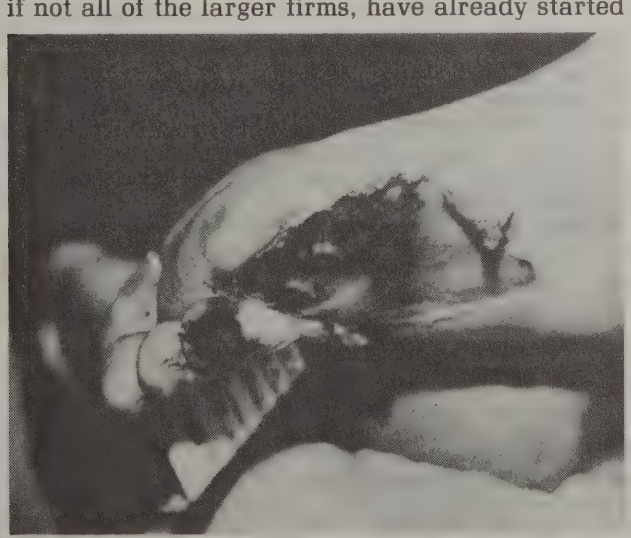
(2) Put up the antenna/mast/tower/pole and get it all snugged and into position, and then somehow mysteriously "climb" or "shinney" up the mast/pole or tower and **then** connect the coaxial cable to the antenna; **after** all danger has passed.

CPSC has found, they say, that most accidents occur when the antennas are being put up, or taken down. Antennas that blow or fall over after installation may do severe damage if they fall into a power line, **but they seldom kill** because nobody is around **holding onto** the metal structure when they fall.

Inspite of these problems, and the serious questions raised by antenna system designers, CPSC seems intent on proceeding onward marching to the drumbeat of its mandate to "save us from ourselves".

The Industry Response

There are, it is said, more than 100 (somebody counted 107 at PC-77 in Las Vegas) manufacturers of CB antennas. Some of these, and certainly most if not all of the larger firms, have already started the wheels into motion to produce for insertion into all base station antenna boxes an 8 page safety brochure or manual. CPSC has stated that they "will require" such a manual as a part of their new "rules" in this area. Such a manual is being produced through the auspices of the Electronic Industries Assoication (EIA).



MAJOR VOLTAGE EXIT is typically through soles of feet (one coroner we talked with said 'the soles of both feet were blown clear off by the jolt') with cauterizing of the skin in the exit region.

Other manufacturers, **on their own**, such as RCA and Antenna, Inc. had begun either labeling antenna products or enclosing safety data sheets with all base station antennas shipped. The labels being utilized do not meet "CPSC standards"; nor do the manuals. But the companies have done it **without** any "shoving or pushing" from CPSC, even **before** CPSC got into the act. And these companies deserve a pat on the back for trying.

The labels for the outside of containers (i.e. the containers that get stacked up for display purposes) are met with mixed response. More than a majority of the manufacturers seem willing to label the product **itself** with the "Kill Label" which includes the suggestion that the instructions be read; but perhaps no more than 50% of those CBA talked with indicated they would **willingly** comply with **exterior**-package labels. Those who seemed adamant against it were extremely reluctant to give in on this point.

All of this is frosting on the cake. It won't make or break anyone, except perhaps for the guy that manufactures chimney straps or 5 foot pieces of tubing. The real battle coming will be the re-design to a 'safe antenna'. Engineering arguments will fly on both sides, and very large hostilities are bound to be evident before the battle is over. Logically. . .it should all boil down to whether or not the "insulated antenna" is a true 100% (or even 90%) safety-answer; and if it is, will it be cost-prohibitive to manufacture and sell? **At what point does the added cost of safety turn an otherwise saleable product for the mass market into a product only the wealthy and well heeled can afford?**

"I can see a sudden resurgence in self or home-constructed antennas" noted one antenna manufacturer.

The CBA Position

We obviously believe in safety. **We** don't like seeing anyone fried, and our members in particular. **Our** computer tells us that an unusually high percentage of CBA members **have** base station installations; 38% to be precise based upon a January computer analysis.

We believe the problem is more of an educational problem than a "protect us from frying ourselves" problem. **We** endorse the concept of a safety manual to be packed with every base station antenna, but **we** find it difficult to support forcing people who make chimney straps, guy wire, coaxial cable and pieces of tubing to label their products with "Kill Labels" and then attach a set of "safety instructions".

The antenna manufacturers we feel sorry for. Their product is already safe. It is **not** their fault careless people mis-use the product. Until gun, bullet, auto, gasoline, jack-knife, ice-pick, and

rubber band manufacturers are forced to label their products with "Kill Labels"...**we** have a difficult time seeing the fairness involved in singling them out in this situation. And when outdoor TV antenna people and amateur antenna manufacturers get by with**out** CPSC scrutiny...simply because the CPSC computer fails to flash red lights and ring bells, **the situation becomes extremely dumb.**

For **our** members, we see **rising** antenna **costs** and a new round of "inflation" based upon increased base station antenna prices. The American automobile is a perfect example of enforced safety "standards". Remember when a simple 6 cylinder Ford or Chevrolet cost under $2,500? Government enforced "safety standards" have been a major contributor to their present $4,000 price tags.

Yes, safety does cost money. But for the money spent, you expect to see **some reasonable chance** of results. Five year permanent labels and dozens of plastic-bagged, repetitious "safety manuals" per installation is not the answer.

Education is the answer. A single manual per installation, packed with the small antenna parts and an adequately labeled **antenna proper** is a more common sense approach to the "kill labeling problem". **If** it is true that the average educational background of people killed by electrical shock while installing a CB base station antenna **is the sixth-grade**...words and drawings and instructions will have limited impact. People who don't read well will **not** read an 8 page manual.

But they might look at a picture. One like that one appearing on the inside front cover of this issue of **10-4 CB'er Magazine** this month. Now that is an "image" a person will carry with them for many years. Getting zapped by 7,200 volts **is** a horrible way to go. **That's the real message here.**

10-3

DUMB-DUMB THINGS TO AVOID

(1) **NEVER** attempt to **stack sections** of 5 or 10 foot antenna mast pipe; it is **not** designed to be stacked, even if guyed.

(2) If you **MUST** fabricate your own mast **(rather than** purchasing a ready-built telescopic mast that pulls up a section at a time), use this test. **After** the mast is constructed (water pipe, etc.), go to the **center** of the mast and **lift** it **up** 1 foot above ground for each 20 feet of length. If when you lift it up the two ends stay **on the ground** (i.e. bow), you've got a very poor chance of ever getting it in the air in one piece (i.e. it is **not** strong enough, especially with the antenna mounted on one end).

(3) To raise a self-constructed mast even in a safe (i.e. no high voltage) area from a flat-out (laying on the ground) position, you will need **no less than** one man for **each** ten foot of length of mast/pipe on the ground **plus two men on the roof** to catch and steady the mast when it is raised into position.

(4) **ANY** steel mast/telescopic mast requires **no less than** one full set of guy wires (in three OR four directions) at **EVERY** ten foot level. If the mast attaches to the house at the ten foot above ground level, start the guy wires at the 20 foot above ground level.

(5) With a TELESCOPIC mast you need **no fewer than** two men doing the lifting of the sections **PLUS** one man "free" to run around and keep guy wires from tangling **PLUS** one man at **each** guy wire anchor location. REMEMBER with telescopic masts that there is **NO support** from the guy wires **until** the last section is pulled up to its resting place (i.e. guy wires do **NOT** pull TAUNT **until** tne mast is **fully** elevated).

(6) Do **NOT** even ATTEMPT to install a mast or telescopic support system **when the wind is over 15 miles per hour.**

(7) With ANY mast or pipe support system, keep **one man unassigned** as a SPOTTER to stand back away from the activity and give instructions or shout warnings **if** something fouls up. Advise everyone to heed his instructions/warnings.

(8) Instruct every person to **be ready to drop** whatever it is they are doing and **be prepared to run** or duck away from the installation; and IF the system starts to get away, **do NOT attempt to fight it back.** At this point the un-involved spotter should shout a warning and everybody should **get the hell out of the way** in one big hurry. Saving a few dollars in pipe and tubing, even **if** it could be saved, is **not** worth the risk of serious injury or death. **Be smart—run...fast!**

(9) Everyone should watch to be certain that the coaxial cable, guy wires, etc. do not get tangled up **or** get tangled **around** someone's legs. There is only one thing worse on your heart than hearing the shouted instructions to run **and finding you can't run** because the coax is wrapped around your ankles; and that is getting across a 7,200 volt line.

(10) **Think.** Don't assume the other guy will. Somebody HAS to be in charge of the project. It's great to have buddies...but somebody in the group has to have the smarts to be in charge and issue instructions. **Remember** the eight guys putting up the antenna... five of them died and three were badly injured.

(11) Go back...**one more time**...and look at the results of carelessness, on the inside front cover here. **Being dumb can be fatal.**

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LEGAL CONSIDERATIONS IN ERECTING TOWERS AND ANTENNAS

Your local municipality or development may have established height and building standards governing the use of radio towers and antennas. Height restrictions are found in zoning ordinances and private deed restrictions. Building standards may be found in local building codes. Complying with these requirements is usually easy and will help to provide many years of safe and trouble free operation of your station.

Zoning ordinances, building codes and private deed restrictions are complex legal documents. If you question whether they apply to you, consult a local attorney. Five minutes spent in advance can save many hours later.

Zoning ordinances, building codes and deed restrictions are local. If you move from city to city these restrictions may change.

Zoning ordinances are concerned with the type of buildings or other structures you can erect in your neighborhood. In terms of amateur radio or CB towers and antennas, zoning laws will tell you if your property is zoned for such towers and antennas and, if so, what height limitations, if any, are involved.

Building codes are concerned with the safety of buildings or other structures permitted by local zoning ordinances. Building codes will tell you where on your property you can put the tower and antenna and the type of base and support (such as guy wires) you will need.

Both zoning and building codes are usually administered by the same governmental agency, often known as the Department of Building and Safety or the Zoning Board.

The Personal Communications Foundation believes that the following steps will help make sure you have a safe and legal installation:

1. Check with the local governmental agency. Ask whether your home is zoned for an amateur radio or citizens band tower and antenna.

2. Look at the actual zoning ordinances. Pay special attention to the definitions. Many zoning ordinances distinguish between "buildings" and "structures". Others distinguish between towers physically attached to the house, either by guy wires or mounting and towers that are not attached.

3. See if a building permit is required. If so, be sure to get one. They are usually quite inexpensive, often less than one percent of the cost of the tower. As part of the building permit, a local inspector will check and make sure that the base, guy wires, etc., meet local safety requirements. Modern commercially made towers are extremely safe and have a large safety margin, but only if you install them according to the directions! Paying $10.00 to $25.00 for an expert to inspect the foundation and finished installation is the cheapest insurance you can possibly buy! If a permit is required and not obtained, your homeowners' insurance may not insure the tower and you have given neighbors, who might object, ammunition to require you to take the tower down.

4. In a limited number of cases you may need either a zoning variance or a conditional use permit to erect a tower higher than the local zoning board requirements. If so, it is far easier to apply in advance than to put up the tower and apply later. Most local governments are quite cooperative if you apply in advance and follow their rules. Variance provisions are used to provide flexibility from dimensional regulations such as setback or height restrictions. Conditional use permits are used where towers or antennas are not otherwise allowed. A public hearing is usually required before such permits are issued.

5. In addition to local ordinances, real estate developers or homeowners' associations may impose their own requirements in a subdivision. These requirements are usually known as deed restrictions or Conditions, Covenants and Restrictions (CC&R).

If you are thinking of moving into a new area, ask for a copy of the deed restrictions in advance of signing an offer to purchase the property. If you already own a home, a local realtor, title insurance company or lawyer can obtain copies of the deed restrictions, if any, for you. Don't take the word of the real estate salesman who may be wrong!

If there are no deed restrictions, you need only be concerned with local zoning and building codes. If there are deed restrictions, read them carefully. Look at the definitions. See if there are any restrictions on outside antennas or on the height of buildings or other structures or if a local architectural control committee must pass on any additions or changes to your property.

Deed restrictions are legal documents. A local lawyer familiar with real estate law can read the restrictions in only a few minutes and advise you. Even if the deed restrictions prohibit or restrict the size of towers and antennas, they may be unenforceable if many of your neighbors have erected such towers and antennas and no objections have been raised.

If you follow these simple rules, you should not encounter any problems or unpleasant surprises. Happy communications.

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